PULP & PAPER

AUGUST 1959

Editor's 100 Days in Europe
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USSR Pulp Chief — Interview
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New Design in Woodyards
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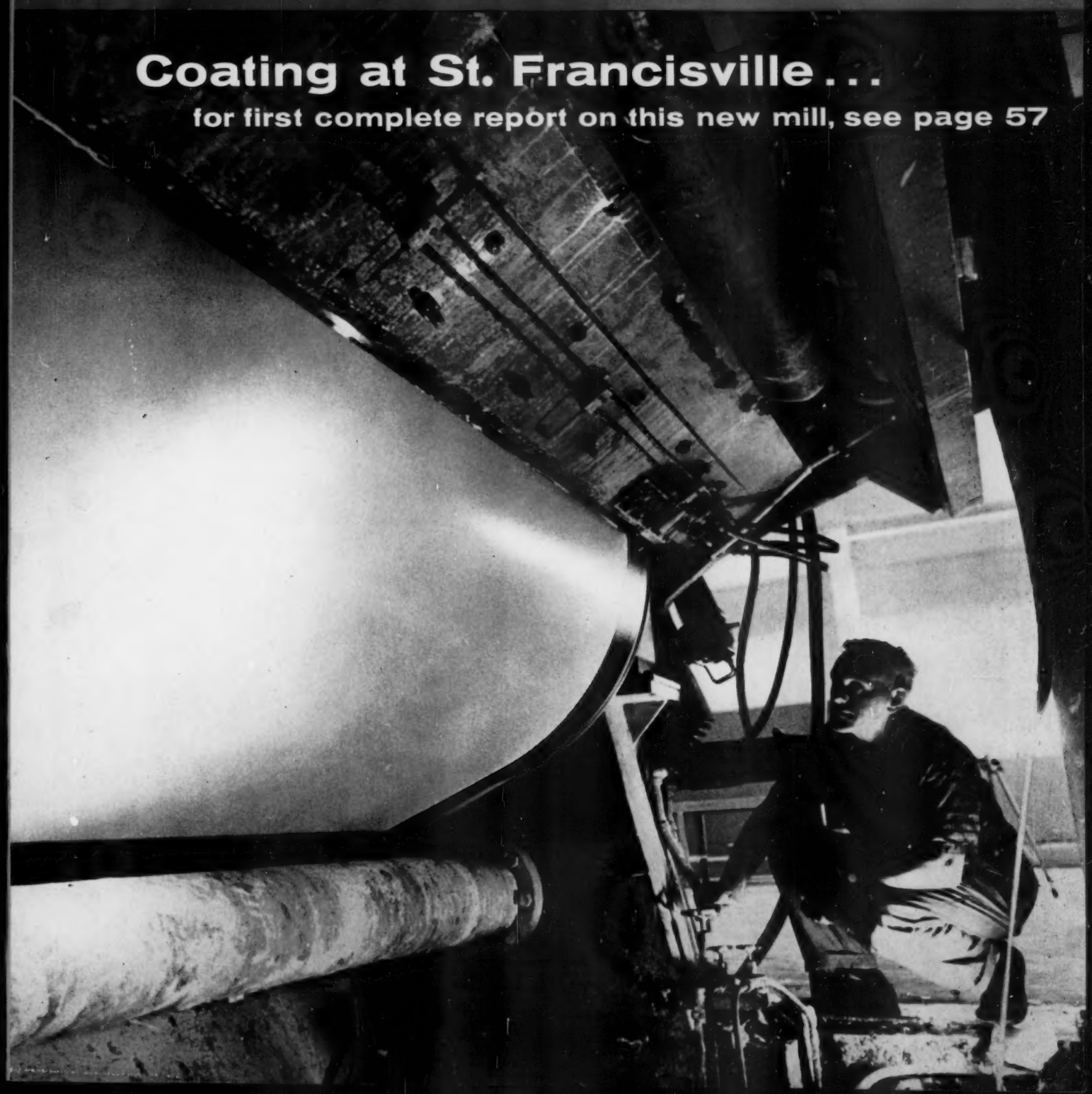

Coating at St. Francisville . . .

for first complete report on this new mill, see page 57

BOLTON has the makin's in papermaking steels

As number one supplier of stock preparation parts, Bolton carries 4,000,000 lbs. of steel to meet the Papermaker's needs promptly! Included are tool steels, high speed and carbon steels, Bolton Special Stainless, phosphor-bronze and other specification alloy steels.

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- **Blue Devil Chipper Knives**
- **Boltoloy Paper Knives**
- **High Alloy Castings for Jordans and Refiners**
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The Emerson Manufacturing Co., Division
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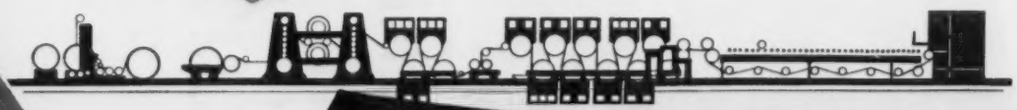
56 DRYERS



14 DRYERS

The two paper machines sketched above are identical in production and quality of product.

The Rice Barton Gardner Dryered machine requires less space, costs less to install, and costs less to operate.

If you are thinking about a new paper machine, look into the only truly modern paper machine on the market.

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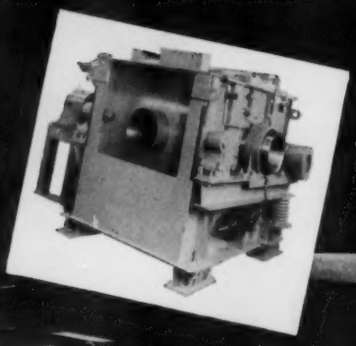
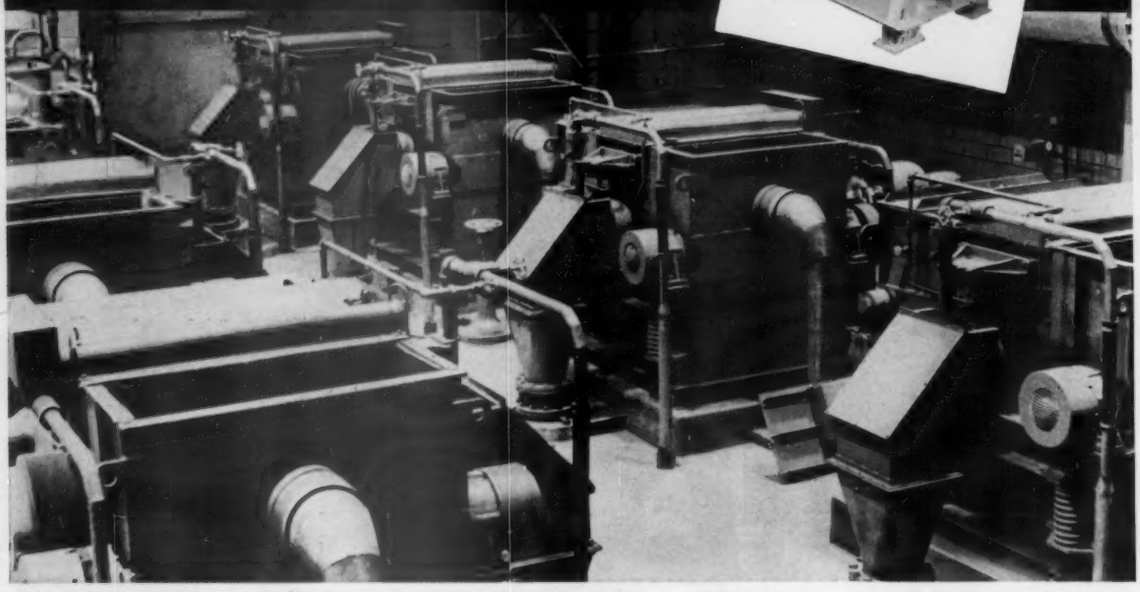
WORCESTER, MASSACHUSETTS U. S. A.

Paper Machinery Builders Since 1837

HIGH CONSISTENCY HIGH CAPACITY SLOTTED PLATE SCREENING





BIRD VIBROTOR SCREENS

handle high consistency stock in big quantities like this — up to 60 tpd of 1.7% unbleached sulphate, 90 tpd of mixed pine and short fibred stock through .012″ slotted plates; 80 tpd of deink through .010″ cut plates; 80 tpd of newsprint through .014″ slots. These high capacities are for a single Vibrotor Screen occupying less than 150 square feet of floor space.

Ask for layouts and estimates.

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BIRD MACHINE'S 50th YEAR OF SERVICE TO INDUSTRY

PULP & PAPER

Reader's Guided Tour

VOLUME 33
NUMBER 9

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100-Day Tour of European Industry 57

A summary of the editor's 100-day trip to 13 countries in Europe—from France and Spain to Midnight Sun land of Sweden. The greatest growth in paper production and consumption in the world in immediate future years will be in Europe, he predicts.

Exclusive Report on Russian Pulp Plans 60

In Moscow, the editor talked with Vlas Nichkov, president of Exportles, the Russian bureau controlling all exports of wood products, who revealed what may be expected to be the Soviet's role in future years in international trade, especially in woodpulp and pulpwood.

First Report on St. Francisville 64

This complete report by William F. Diehl Jr., Southern editor of P&P, describes this revolutionary mill, where Crown Zellerbach and Time Inc. are producing coated printing paper by new processes and novel equipment.

COVER PICTURE — shows trailing blade coater at St. Francisville, one of two coating sections on the machine in this revolutionary new mill.

Continuous Brightness Meter 78

Lowe Paper Co., pioneer in the development and use of instruments for measuring optical properties, has in successful operation at its New Jersey mill a new concept in brightness meters.

New Concept in Hardwood Handling 110

At its Cornwall, Ont. plant, Howard Smith Paper Mills Ltd. has completed what is one of Canada's most modern woodyard and woodroom operations. Continuous woodroom operation is geared to speed of the hoist (about 60 cords per hour). And outside chip storage is also an innovation in the eastern Canadian industry.

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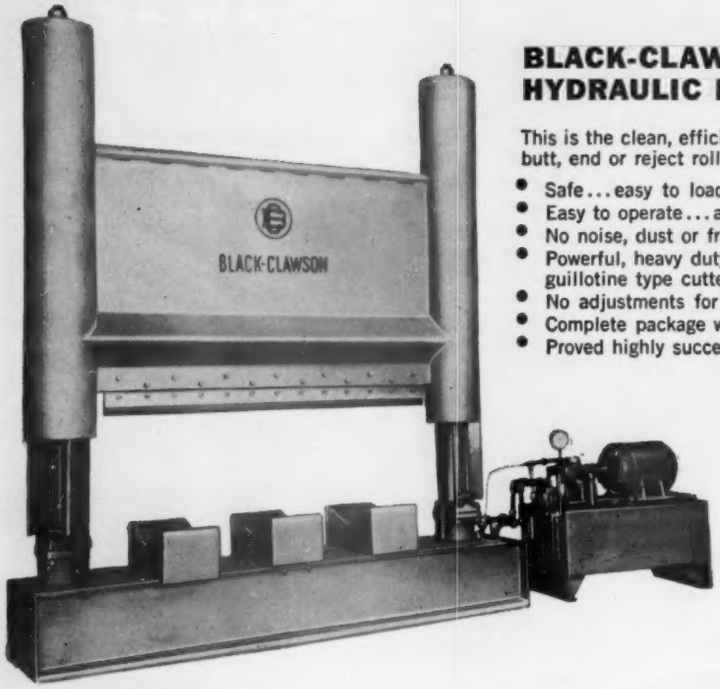
How to Split Rolls with Ease and Speed

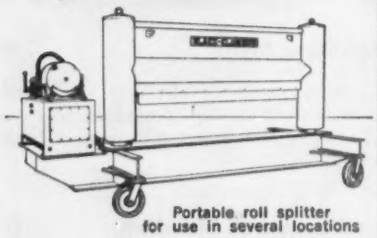


BLACK-CLAWSON HYDRAULIC ROLL SPLITTER

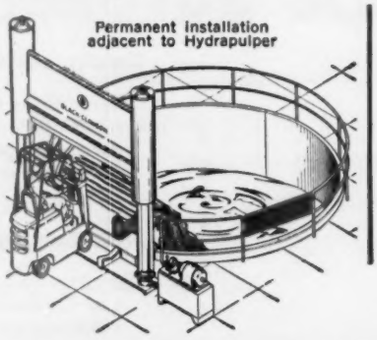
This is the clean, efficient, modern way to split pulp rolls, butt, end or reject rolls for fast, economical repulping.

- Safe... easy to load
- Easy to operate... a one-man job
- No noise, dust or frustration
- Powerful, heavy duty hydraulically actuated guillotine type cutter
- No adjustments for variations in roll diameters
- Complete package with power unit, base and controls
- Proved highly successful in many mill installations

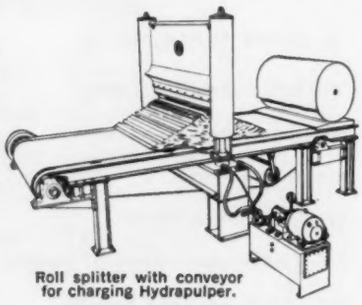
Write or phone the Shartle Division for complete details.



Portable roll splitter for use in several locations



Permanent installation adjacent to Hydrapulper



Roll splitter with conveyor for charging Hydrapulper.

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MILLER FREEMAN PUBLICATIONS

The Editor Reads His Mail

Address letters to The Editor, PULP & PAPER, 1791 Howard St., Chicago 26, Ill.

More Facts About Russia And A Correction

—London

Editor: In your July article on Russia, you mentioned the four mills being built in the Astrakhan, Caspian Sea and Ukraine areas which will use a reed for pulp which was identified as "arunda donax." In fact, this is "phragmites communis." "Arunda donax" is a cultivated type of reed grown in Italy and used by Snia Viscosa to make dissolving pulp.

In a separate "box" with this article you mention that the final steps in purchasing equipment for mills is carried out by Technoproimport. This was true, but Technoproimport is now split up and the machinery for the pulp and paper industry is now purchased by Techmashimport. The president of Techmashimport is Mr. V. A. Klentzov.

C. W. CONVERSE
Director,
Lyddon & Co. Ltd., London

(Editor's note: Having spent many weeks in Russia, Mr. Converse should know about the reed, and we are grateful, also, for the new information on the purchasing routine. As regards the reed, the Russians call it "kamish" and said it grows 10 ft. tall and is cropped annually. Our editor can't recall whether one of the engineers volunteered the name "arunda donax" as further identification; or whether the editor asked a leading question: "Isn't this arunda donax?" in which case he got an affirmative reply from one of his hosts, who may not have clearly understood.)

On Reports from Europe

—Seattle

Editor: Enjoyed very much your news reports from the 13 countries you visited in Europe, especially including Russia and developments there. It is certainly good for the industry and for the younger executives to get a better perspective of the world conditions.

DAVID W. HARRIS
C. C. Moore & Co., Engineers

U. of Maine Article "Much Appreciated"

Editor. I was very interested to read the article on the University of Maine Pulp and Paper Foundation and I am most appreciative of the publicity given to the Foundation. It certainly should help to get the story across as to the good work that is going on.

I have not yet had a chance to read Al Wilson's report on Russia, but look foward to doing so.

BILL CHISHOLM
President
Oxford Paper Company

P. S. I was very taken with the picture of myself included in the Foundation article. It almost makes me look like an expert.

All Paper for Albania Imported

—Tirana, Albania.

The Editor: Thank you for your letter inquiring about paper or cardboard production in this country, but we regret that we cannot supply you with this, because there is no paper industry here yet.

A. GEDESHI
Chamber of Commerce of the People's Republic of Albania

MEETING DATES CALENDAR

August 17-21
10th TAPPI Testing Conference
Multnomah Hotel, Portland, Ore.

September 1-3
New York-Canadian Division PIMA
Chantecler Hotel, St. Adele, Que.

September 9-11
Northwestern Division PIMA
Hotel Leamington, Minneapolis, Minn.

September 10-12
Wood Industries Conference (sponsored by the American Society of Mechanical Engineers, the Forest Products Research Society and the American Institute of Chemical Engineers)
Multnomah Hotel, Portland, Ore.

September 9-11
Fundamental Research-Wet Strength Conference
Institute of Paper Chemistry, Appleton, Wis.

September 15-17
9th TAPPI Corrugated Containers Conference
Jung Hotel, New Orleans, La.

September 21-23
14th TAPPI Paper-Plastics Conference
Edgewater Beach Hotel, Chicago, Ill.

October 12-15
14th TAPPI Engineering Conference
Penn-Sheraton Hotel, Pittsburgh, Pa.

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...when Gottesman enters the picture! If you want the benefit of pulp know-how based on 73 years of service to the pulp and paper industry, look to the Gottesman Organization. We have built a network of excellent sources of supply in every grade—and our experience helps you buy reliably, efficiently!

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MONTHLY REPORT – WORLD NEWS

A RECORD YEAR . . . seems to be in the offing for Swedish market pulp shipments despite production restrictions on all grades except bleached sulfate. Estimated exports of chemical pulp in the first five months totaled 825,000 tons (748,275 metric) as compared to the 670,000 tons (607,690 metric) in the same period of 1958.

JAPAN'S STEADY DEMAND INCREASE . . . has been estimated at 9% per year by the Japan Paper & Pulp Assn. At this rate, domestic demand will approximate 4,846,000 tons in 1962. Biggest increases will come in newsprint and wood-free paper.

FRANCE'S THREE-MONTH CONSUMPTION DOWN . . . to 644,930 tons (586,300 metric) as compared to 673,530 tons (612,300 metric) in the first quarter of 1958. The decrease is "alarming," according to French sources, in view of the substantial increase in production capacity that took place in 1958.

NORTH AFRICA'S FIRST . . . large-scale esparto pulp mill is being undertaken by Societe Nationale Tunisienne de Cellulose. Global contract for the $11,000,000 plant has been awarded to the Parsons & Whittemore/Lyddon Organization, which will direct over-all planning, equipment supply, erection and start-up. The mill will produce 88 tons (80 metric) per day of bleached esparto pulp for world markets.

WESTERN CANADIAN MERGER PROPOSED . . . The boards of MacMillan & Bloedel Ltd. and of Powell River Co. Ltd. have approved in principle a plan for merger. In a joint statement the respective chairmen had this to say: "We feel that the proposed amalgamation would improve the ability of the amalgamated company, under Canadian control and ownership, to meet increasing competitive pressures from powerful companies in other countries."

IMMEDIATE CONSTRUCTION PLANNED . . . for eastern Canada's newest pulp mill. Nova Scotia Pulp Ltd. will build its $40,000,000 bleached sulfate plant on the Cape Breton side of the Strait of Canso. The mill, with the backing of Stora Kopparberg Corp., will have a daily capacity of 300 tons.

U. S. MACHINERY FOR ARGENTINA . . . where Papelera Argentina SA and Compania General Papelera de Buenos Aires SA have been extended credits totaling $2,220,000 by the Export-Import Bank, Washington, D. C., U. S. A. The firms will purchase papermaking equipment from Beloit Iron Works, Beloit, Wis., U. S. A.

PAPER AND BOARD'S CLOSE RELATION . . . to over-all United States business activity was demonstrated in the first quarter as production increased 9.8% over a year ago, closely paralleling general economic advances.

AFRICAN PULP MILL POSSIBILITIES . . . are being discussed by the Colonial Development Corp. The CDC reports completion of the afforestation of 100,000 acres in the Usutu forests in Swaziland. However, any pulp mill in the region may have to provide its own transport and power.

NO PRICE INCREASE LIKELY . . . for Canadian newsprint before 1962 at the earliest, according to Robert M. Fowler, president of the Newsprint Assn. of Canada. He pegs the current operating ratio of the industry at between 80 and 85% of capacity and declares it unlikely that the percentage will exceed 92 until 1962.

AUSTRALIA'S NEWEST PLANT . . . for the production of fiberboard containers has been opened at Woodville North by Fibreboard Containers Ltd.

PROGRESS IN YUGOSLAVIA . . . where various types of impregnated and similar papers are being produced on an extensive scale. Boosting the supply of laminated paper will be the 1960 operation of the modernized and reconstructed Karbon mill in Zagreb.

Better paper, made faster with B.F.Goodrich suction press rolls

Mills east of the Rockies can save money on freight costs

WITH a B.F.Goodrich suction press roll on your paper machine, you get maximum water removal and better paper formation even at high speeds. That's because B.F.Goodrich uses a special tough rubber compound for the cover that keeps the drilled holes from cupping out. This reduces shadow marking, keeps the roll operating at top efficiency for a long time.

In the picture you see the suction press roll on a new paper-making unit at Crocker Burbank & Co. Association, Fitchburg, Mass. On this new equipment, with B.F.Goodrich rubber-covered rolls used throughout, production of high-grade printing papers has been doubled. The rolls have needed no maintenance of any kind.

Many paper mills east of the Rockies have found that by specifying B.F. Goodrich rubber-covered suction rolls, they can save on freight costs. Reason is that the B.F.Goodrich plant is much closer than any other roll-covering facility to the companies that specialize in drilling the holes.

Whether you're buying a new paper machine or having suction press rolls recovered, be sure to specify B.F.Goodrich to your machine builder. You'll save money in the beginning, and get longer and more efficient service. For more information on these suction press rolls or any of the rolls B.F.Goodrich makes for the paper industry, write *B. F. Goodrich Industrial Products Co., Dept. M-623, Akron 18, Ohio.*

B.F.Goodrich *paper mill rolls*

MONTHLY REPORT – WORLD NEWS

IMPROVED EFFICIENCY IN TASMANIA . . . where Tasman Pulp & Paper Co. Ltd. increased newsprint production in 1958 by 25% over the previous year. Machine speed was increased from 1,600 to 1,900 fpm.

SURVEY FOR ROCKY MOUNTAIN NEWSPRINT MILL . . . is underway by Crown Zellerbach Corp., now giving a close look at the Denver, Colo., U. S. A. area. Should the company proceed with the mill, according to President R. O. Hunt, the project would take approximately two to three years.

SCOTT TISSUES IN SOUTH AMERICA . . . where the recently formed Scott de Colombia SA is converting paper stock manufactured by Scott Paper Co. in the United States. The company is owned jointly by the U. S. firm and two Colombian industrialists, Sr. John Gomez Restrepo and Sr. Mario Uribe Uribe.

EXPANDED OPERATIONS AT KETCHIKAN PULP CO. . . . where 47,226 tons (42,870 metric) were produced in the first quarter, up sharply from the 35,976 tons (32,630 metric) produced in the same period a year ago at the Alaskan mill.

NEW MILL FOR INDIA . . . where West Coast Paper Mills Ltd. has started up at Dandeli, Mysore. It is the only completely new integrated pulp and paper unit to be built in the second Five-Year Plan period. Bleached and unbleached bamboo pulp is used in the manufacture of writing, printing, kraft and wrapping papers.

CROSSETT STUDIES COATING . . . at a $105,000 pilot plant recently completed by the Research div. Various methods of coating bleached foodboard and kraft paper will be investigated. The plant was designed for Crossett Paper Mills, Crossett, Ark., U. S. A., by the Dilts div. of Black-Clawson Co. and can run paper or paperboard 12 to 36 in. in width at a minimum speed of about 50 fpm. The unit duplicates problems and potentials of the full-size commercial coater.

NEW MILL FOR CALIFORNIA, U. S. A. . . . where Georgia-Pacific Paper Co. will build a pulp and paper plant at Samoa to utilize waste from G-P's forest products operations in the Eureka-Samoa area.

KOREA'S LARGEST PRODUCER . . . will come into operation soon following the rehabilitation of one of the nation's major mills. Cooperating are the Korean ministries, the Korean Reconstruction Bank, and UNKRA. Included in the project: the modernization of a four-cylinder modified Yankee machine for board production; introduction of improved straw pulping techniques; the rebuilding and installation of a 134-in. Fourdrinier paper machine, and auxiliary equipment.

BRITISH LABOR FORCE UP 2,500 . . . in the paper and board industry. At the end of February the employed totaled 99,800, as compared to 97,300 at the end of February 1958.

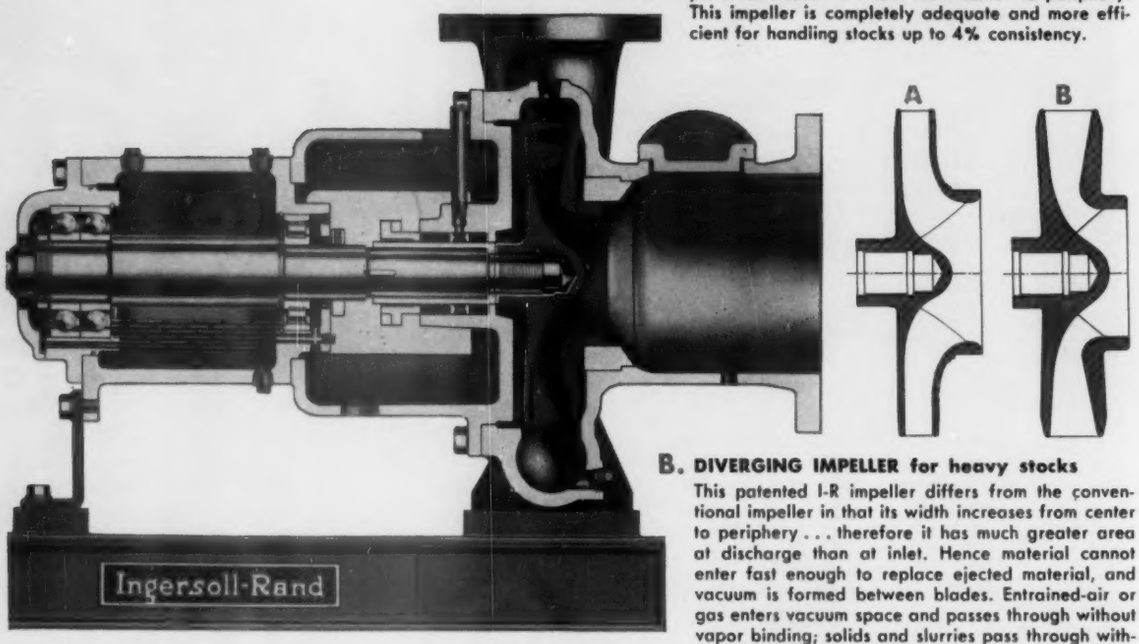
EUROPE'S NEWEST BOARD MACHINE . . . is in operation at Goose Green, Wigan, England, where Reed Corrugated Cases Ltd. has entered production at its new plant. The machine, built by Masson Scott & Co. Ltd., operates at 650 fpm.

WORLD SAFETY RECORD FOR PULP MILLS . . . has been set at the Memphis, Tenn., U.S.A. plant of Buckeye Cellulose Corp. The new no-injury record for pulp mills (as well as for the entire pulp and paper industry) is 3,851,159 man-hours. The last disabling injury took place January 22, 1956.

THREE NEW MILLS FOR KOREA . . . where the Daihan plant just north of Seoul is being readied for operation. The German-equipped facility will produce newsprint and will soon install a coating plant. . . . A new bond paper mill at Taegu (also German-equipped) reports good results on test runs. . . . Specialty Paper Co. is constructing a bond mill 10 miles south of Seoul that will have a daily output of 25 tons.

Ingersoll-Rand All-Purpose stock pumps

A. CONVENTIONAL IMPELLER for normal stocks
As the drawing clearly shows, the conventional impeller decreases in width from center to periphery. This impeller is completely adequate and more efficient for handling stocks up to 4% consistency.



B. DIVERGING IMPELLER for heavy stocks
This patented I-R impeller differs from the conventional impeller in that its width increases from center to periphery . . . therefore it has much greater area at discharge than at inlet. Hence material cannot enter fast enough to replace ejected material, and vacuum is formed between blades. Entrained-air or gas enters vacuum space and passes through without vapor binding; solids and slurries pass through without abrupt acceleration and with lower velocities.

Now a single line of pumps handles both normal stocks and heavy stocks!

Simply by selecting the right impeller for your particular stock pumping problem (see explanation above), you can handle *normal* stocks up to 4% consistency . . . or *heavy* stocks up to 10% consistency and large amounts of entrained air! The same Ingersoll-Rand All-Purpose pump does both jobs . . . *the two types of impellers are completely interchangeable.*

All you need do to switch from normal to heavy stock pumping is remove the *conventional* impeller and casing ring . . . and replace it with the patented *diverging* impeller and casing ring.

Between the heavy-duty pump and the normal-duty pump, all parts are identical . . . except for the two types of impellers and their casing rings. This means you save *at least* 50% on stocking spare parts . . . one set of parts will serve pumps on two types of service.

For complete data on Ingersoll-Rand All-Purpose stock pumps, contact your I-R representative . . . or write direct.

Ingersoll-Rand

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MONTHLY REPORT – WORLD NEWS

RESEARCH IN SPEEDED TREE GROWTH . . . is the aim of a 1,000-sq. ft. greenhouse and workshop under construction at Camas, Wash., by Crown Zellerbach Corp. The unit will test the effect of fertilizers on the early growth rate of Douglas fir, western hemlock, Sitka spruce and other commercial softwoods. Planned future studies include: seedling survival, performance and soil fertility.

EXPANSION AND MODERNIZATION . . . at Mohawk Paper Mills Inc., Cohoes, N. Y., has included installation of three new Samuel M. Langston Co. paper machine winders, new reels and the addition of warehouse space.

FURTHER EXPANSION IN UPPER NEW YORK . . . where St. Regis Paper Co. will invest $2,000,000 at its Printing Paper div. Included: two-stage bleach plant for production of 150 tons of bleached groundwood; replacement of the groundwood deckering system; modernization of electrical distribution, and various machine improvements.

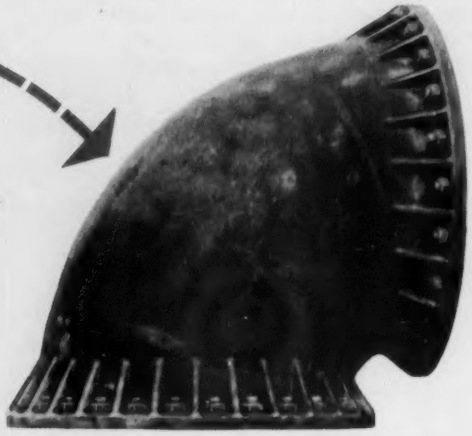
TWO NEW CORRUGATED BOX PLANTS . . . for the container division of West Virginia Pulp & Paper Co.–one in Torrance, Cal., one in Phoenix, Ariz.–will go into operation as soon as necessary production facilities can be installed.

CONTINUED GROWTH IN VIRGINIA . . . where Chesapeake Corp. of Virginia will spend another $2,000,000 for facilities for a new 12,500-kw turbine generator. This on the heels of a major expansion program at the West Point, Va., mill.

AN IMPORTANT TREND IN THE INDUSTRY . . . is the growing use of duplicator papers, according to Edwin D. Hourigan, sec. of W. H. Smith Paper Corp., Albany, N. Y. Printers are becoming more choosy in the brand or brands they select for the spirit duplicating processes as well as for offset printing.

HOPSCOTCHING THE NORTH AMERICAN INDUSTRY . . . Price Bros. & Co. Ltd. (with two newsprint mills in Quebec has offered to buy the outstanding shares of J. C. Wilson Ltd. . . . Weyerhaeuser Timber Co. has acquired both the folding and corrugated box divisions of Old Dominion Box Co. Inc. at Charlotte, N. C. . . . Directors of Diamond Gardner Corp. and United States Printing & Lithograph Co. have agreed to merge the two firms, subject to stockholders' approval; the action, according to company officials, will strengthen the firms' position in the printing and packaging fields. . . . Construction is underway at the Toledo, Ore., mill of Georgia-Pacific Paper Co.; the project will increase daily capacity to 600 tons at this kraft pulp, paper and paperboard plant; major equipment will include a second Black-Clawson Co. paper machine and a Combustion Engineering Inc. recovery boiler. . . . Weyerhaeuser Timber Co. stockholders and directors have approved changing the name to Weyerhaeuser Co. . . . Fort Wayne Corrugated Paper Co. has merged with Continental Can Co.; the latter firm immediately sold three of Fort Wayne's four corrugated box plants and liquidated the company. . . . St. Regis Paper Co. has filed with the SEC a registration statement relative to the issuance of St. Regis common to be offered in exchange for the 110,000 outstanding common shares of Chemical Packaging Corp., Savannah, Ga. . . . National Gypsum Co. has announced the most ambitious expansion program in its history—a five-year $125,000,000 plan for new plants, acquisitions and increased production at existing facilities; included will be additional paper mills. . . . Champion Paper & Fibre Co. is building a 139,000-sq. ft. office building at Hamilton, Ohio. . . . Western Kraft Corp., headquartered at Portland, Ore., has purchased Western Corrugated Inc., including container plants located at Beaverton, Ore. and Wenatchee, Wash., according to Ira C. Keller, Western Kraft president. Roy F. Fefley, pres. of Western Corrugated, has become vice pres. of the purchasing organization and retains his position as member of Western Kraft board of directors. The acquired organization will keep its identity and operate as a division of Western Kraft.

ESCO Alloy 43H ELBOW



Handles Hot Sulphur Dioxide Gas in Weyerhaeuser Pulp Plant

Installed in 1945, this 30" *ESCO* Cast Alloy 43H elbow continues to give completely trouble-free service at Weyerhaeuser Timber Company's Sulphite Pulp Division at Everett, Washington.

Located between the sulphur burners and the cooling pond, the *ESCO* elbow casting handles corrosive sulphur dioxide gas at temperatures ranging from 1800° to 2000° F. This is one of two headers used alternately. Based on this successful performance, many other *ESCO* Alloy 43H castings have been installed in this operation.

ESCO's wide range of steel alloys and research facilities are solving many severe heat and corrosive problems for the pulp industry. *ESCO* also builds complete digester systems for pulp mill service.

Call your *ESCO* representative for details. Ask him for your free copy of *ESCO* Catalog No. 175, "Alloy and Stainless Steels for the process and manufacturing industries," or write direct.

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The Sulfate Process—Bleaching

SATO, JUNICHI. J. Soc. Textile and Cellulose Inds., Japan 15, no. 1: 24-9 (Jan., 1959). [In Japanese; English summary] Abstr. Bull. I.P.C. 29: 1114.

Unbleached kraft beechwood pulps of maximum and of somewhat lower screened yelds were bleached to the same brightness (Hunter 80) by a five-stage process. For use as unbleached pulp, a Roe number of 4-5 at maximum screened yield seemed economical, whereas a cook of lower Roe number and less than maximum screened yield seemed indicated for use as bleached kraft pulp. Sodium carbonate can be used with considerable cost savings in place of sodium hydroxide for alkaline extraction after chlorination, provided the hydrochloric acid residual in the pulp is removed by thorough washing; otherwise the evolution of carbon dioxide may cause troubles during web formation.

Semi-chemical Developments in Czechoslovakia

Fellegi, Ján, Kubelka, Václav, Janči, Ján, and Hojnoš Ján. Papír a celulosa 13, no. 8: 171-3 (Aug., 1958). [In Slovakian; Russian, German, English summaries] Abstr. Bull. I.P.C. 29:1199-1200.

Poplar and beech are the only hardwoods in adequate supply for semi-chemical pulping on an industrial scale in Czechoslovakia. Because of its high lignin and acid contents, beechwood requires more pulping chemicals than other hardwoods. Investigations concerning the possibilities of lowering the chemical consumption showed that sodium sulfite concentrations above 12% have practically no effect on the mechanical properties of NSSC pulps, although the lignin content is somewhat lowered and the brightness increased at higher sulfite concentrations. For the manufacture of board, the consumption of sodium sulfite can be lowered to 7.5% by re-use of spent liquor. To avoid lignin condensation, the pH of the cooking liquor should not fall below 6.7-6.8 or 6.0-6.3 at maximum temperatures of 175 and 165°C., respectively. Two NSSC processes were developed for the pulping of beechwood for board manufacture and of poplar plus beechwood for paper-making. The first process consists of impregnating beechwood chips with a liquor containing 60 g. sodium sulfite and 15 g. sodium bicarbonate/liter, draining the free liquor and cooking in the vapor phase at 165-175°. The pulp, obtained in 80% yield, has a breaking length of 5 km., a burst strength of 3.5 kg., a folding endurance of 100 double folds and a brightness of 40% at 50°S.-R. For the manufacture of papermaking pulps, poplar or beechwood chips are cooked at 160-170° for 3-4 hr. Only 25-30% of the free liquor is drained off after impregnation. The mechanical properties and brightness of such pulps are higher and can be further increased by bleaching. The recovery process comprises concentrating the spent liquor to a 60% solids content and burning it in a black liquor furnace. The green liquor from the smelt is carbonated in an absorption tower to convert sodium sulfide into sodium hydrosulfide. The solution is then desulfurized (to a hydrogen sulfide content of 1-2 g./liter) in distillation columns at 50-60°. Hydrogen sulfide is oxidized to sulfur dioxide, which is utilized for the sulfitation of green liquor. Preliminary pilot plant tests of the new pulping procedures and of the recovery process gave encouraging results.

Presented with permission of The Institute of Paper Chemistry, under supervision of Curtis L. Brown, editor of IPC Bulletin. Photostats or translations of original reports available at reasonable cost by writing Eugene Bunker, librarian, Institute of Paper Chemistry, PO Box 498, Appleton, Wis., U.S.A.

Special Dyed Hardboards

FEDOROWICZ, B. Przeglad Papierniczy 14, no. 5: 144-7 (May, 1958). [In Polish] Abstr. Bull. Inst. Paper Chem. 29:687.

Laboratory investigations conducted in Russia led to the development of a dyeing process for special hardboards used as floor coverings. The pulp for these boards is prepared from a mixture of 33% softwood and 67% hardwood chips, fiberized to 12-14° S.-R. Before the addition of resins, waterproofing agents, and alum, the pulps are dyed at 3% consistency with 40-60% suspensions of aniline dyes in water containing 10% or more of a dispersing agent ("NF" compound). The amount of the dye suspension used is determined by the nature of the dye and the intensity of the color desired. The amount of alum added to the pulp is calculated so as to obtain a final pH of 4.5, which is necessary for proper fixation of the dye.

Iron-Tartaric Acid-Sodium Complex for Viscometric D. P. Determination

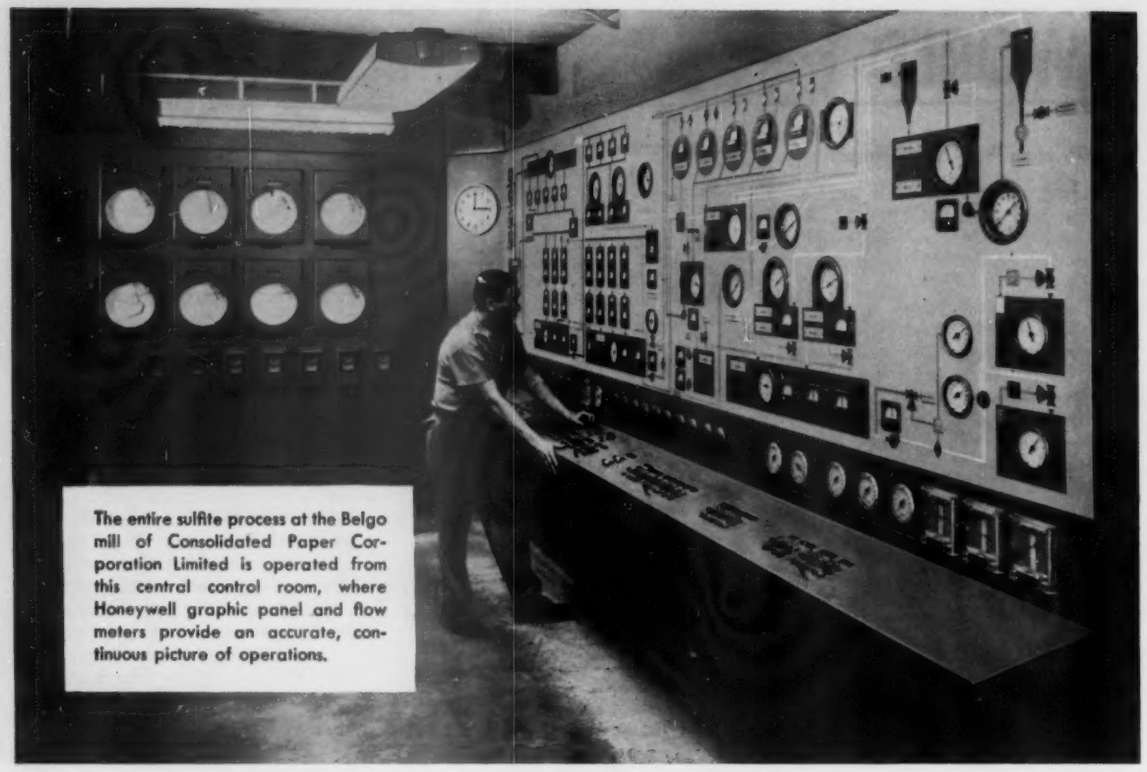
Edelmann, Kurt, and Horn, Edith. Faser forsch. u. Textiltech. 9, no. 11: 493-500 (Nov., 1958). [In German; Russian and English summaries] Abstr. Bull. I.P.C. 29.1121.

The sodium-iron tartrate solvent (EWNN) originally prepared in two steps by Jayne and Bergmann can be prepared within 1 hr. by a one-step procedure similar to that given by Valtasaari. The solvent is resistant for several months to atmospheric and actinic degradation and dissolves pulps and rayons within 30 min. The cellulose solutions can be stored for several days, but only under exclusion of air. A straight-line calibration curve is presented, which permits the weight-average D.P. of celluloses (as found by the nitrate method) to be determined from intrinsic viscosity measurements in the EWNN solvent.

Swiss Synthetic-Fiber Papers

Marek, B., and Société de la Viscose Suisse, *Emmenbrücke, Switzerland]* Textil-Rundschau 13,, no. 12: 721-2 (Dec., 1958). [In German] Abstr. Bull. I.P.C. 29:1182.

Swiss pilot plant experiments have resulted in partly synthetic papers (containing cellulosic fibers to which up to 50% nylon fibers are added) with extraordinary mechanical, chemical and microbial resistance properties. Thus, a paper containing 20% nylon fibers showed three times the folding endurance of the best rag papers; the addition of 10% nylon fibers and a special bonding agent increased the number of double folds of bleached but unrefined kraft paper from 300 to 3000. The abrasion resistance of a 10% nylon paper (60 g./sq. m. basis weight) equaled that of a finished cotton fabric and was more than 10 times as high as that of a tough kraft paper (70 g./sq. m.). After exposure for 15 hr. to 4% hydrochloric acid at room temperature, the synthetic paper lost only 10% of its dry strength and increased 15% in wet strength. On artificial aging for 72 hr. at 105°C. in air, the wet strength increased 34%, with no change in dry strength.



The entire sulfite process at the Belgo mill of Consolidated Paper Corporation Limited is operated from this central control room, where Honeywell graphic panel and flow meters provide an accurate, continuous picture of operations.

Consolidated Paper Corp., Ltd., increases yield with new, Honeywell-controlled sulfite process

The new high-yield sulfite process is bringing a 20% production increase, a 30% chemical saving, and a great reduction in steam use to Consolidated's Belgo Division, Shawinigan, Quebec, Canada. This commercial application of the process features a complete Honeywell control system.

The new process consists essentially of a shortened sulfite cook after which the fibres are "rubbed" to a pulp by mechanical refiners. Much of the lignin and hemi celluloses that would normally be removed at the end of a standard cook are retained. The process operates on three floors of the Consolidated mill, yet, with the highly centralized Honeywell instrumentation, requires only one operator and an assistant.

Your nearby Honeywell field engineer will be glad to discuss your mill's instrumentation needs in installing the new high-yield sulfite process. Call him today . . . he's as near as your phone.

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3 times the belt-life when the chips were down

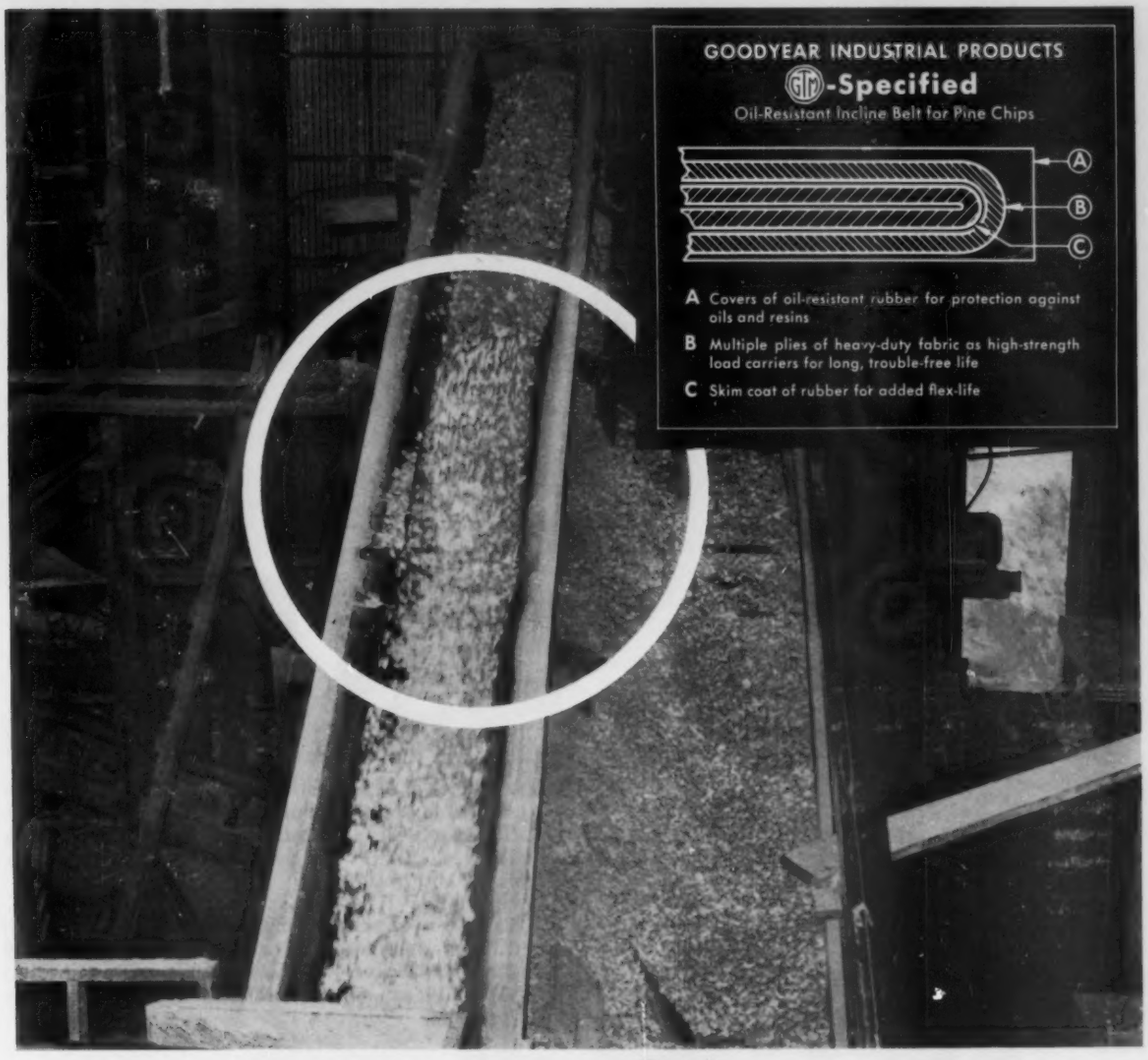
Pine chip oil is the enemy of any conveyor belt. At this Southern paper mill, for example, it kept softening up the chipper belt's cover – flaking off pieces of the rubber–forcing replacement every 2 to 6 months.

What could be done about the frequent shutdowns and recurring high costs, they finally asked the G.T.M.–Goodyear Technical Man. His answer: install a special belt with oil-resistant CHEMIGUM cover – virtually immune to attack from pine oils and resins.

And that did it. For the G.T.M.'s belt has handled its daily torrent of chips for *18 completely trouble-free months* at last report–was still going strong despite stepped up conveyor speed.

And remember–3-to-1 improvements like this aren't at all unusual when the G.T.M. tackles a problem. For you're sure of getting both the best suggestions – and the best-performing industrial rubber products –when you contact him through your Goodyear Distributor. Or you can write Goodyear, Industrial Products Division, Akron 16, Ohio.

Chemigum—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio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A
B
C
A Covers of oil-resistant rubber for protection against oils and resins
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CONVEYOR BELTS BY

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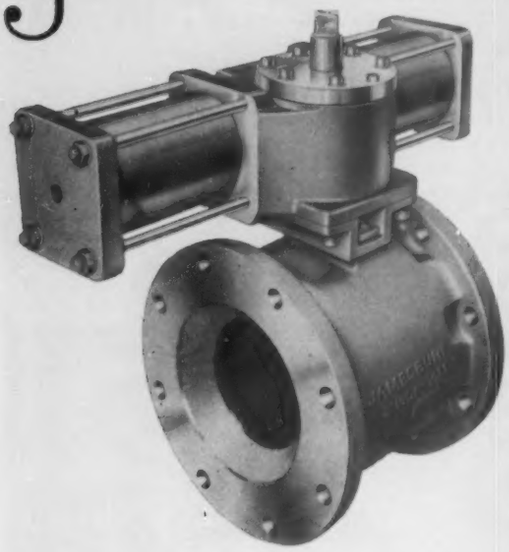
THE GREATEST NAME IN RUBBER

jamesbury "Double-Seal" Ball Valves



For PULP and PAPER MILLS EFFICIENCY and ECONOMY TESTED, PROVEN

Jamesbury, leading designers and developers of the "Double-Seal" ball valve principle, now offer a series of valves for the pulp and paper industry. Exhaustive tests in mill runs have shown the effectiveness of these valves. An example is the Jamesbury Valve used in digester blow service. These valves are ideally designed to handle the after-cooking discharge.

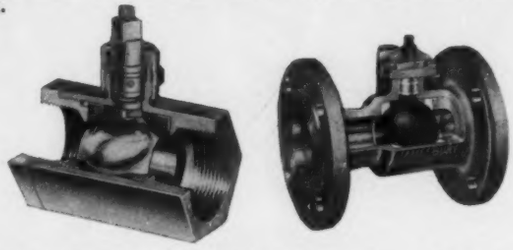
Compare these unique features for *your* valve applications:

ZERO LEAKAGE — "Double-Seal" means seats and seals on *both sides* of the ball, assuring tightest possible closure on both sides of the valve.

HIGH FLOW CAPACITY — with minimum friction loss. Unique valve construction assures utilization of full pipeline capacity.

MINIMUM MAINTENANCE — rugged construction withstands pressure and shock. Needs no lubrication. Compact and lightweight. The self-wiping action of the Ball during rotation prevents residual build-up on sealing surfaces.

REMOTE CONTROLLED — operators available as integral, factory-tested unit, for pneumatic, hydraulic or electric operation.



WIDE RANGE OF MATERIALS — 303 and 316 Stainless Steel, Carbon Steel, Bronze, Aluminum and PVC (Polyvinyl chloride). TEFLON seats and seals — or, if desired, Neoprene or Buna-N. Flanged ALLOY 20, Ductile Iron and Monel valves are available on application.

SIZES — Jamesbury produces Screwed End valves in sizes from ¼" to 3", Flanged valves from ½" to 8" as standard items. 150# and 300# series. 10" valves will be available during the last quarter of 1959. Please request information from Jamesbury Corp. on larger sizes.

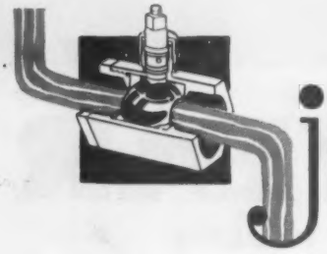
Investigate the Jamesbury Ball Valve concept for these pulp and paper mill applications:

- DIGESTER BLOW VALVES
- WHITE, BLACK AND GREEN LIQUOR LINES
- WATER LINES
- GAS OFF VALVES
- AIR LINES
- ACID LINES
- SAMPLING VALVES
- INSTRUMENT LINES
- BLEACH LIQUOR

Jamesbury "Double-Seal" Ball Valves will help you to:

Prevent Loss of Cooking Liquor
Reduce Blowing Time
Increase Number of Cooks
Assure Trouble Free Processing
Increase Pulp Production
Reduce Down Time

Ask for the new brochure "The Jamesbury Ball Valve In Pulp and Paper Mills." Distributors in Principal Cities.



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Most important to you, this combination of synthetics and chemical treatments can put your machine way ahead in production. Remember, Albany Felts not only last longer, they also give you *more tons per day*.

Start the wheels rolling toward maximum felt life and high daily production in *your* mill. Consult your Albany Felt Sales Engineer. Working with him is the team of experts who wrote the book — "Improved Felt Performance!"

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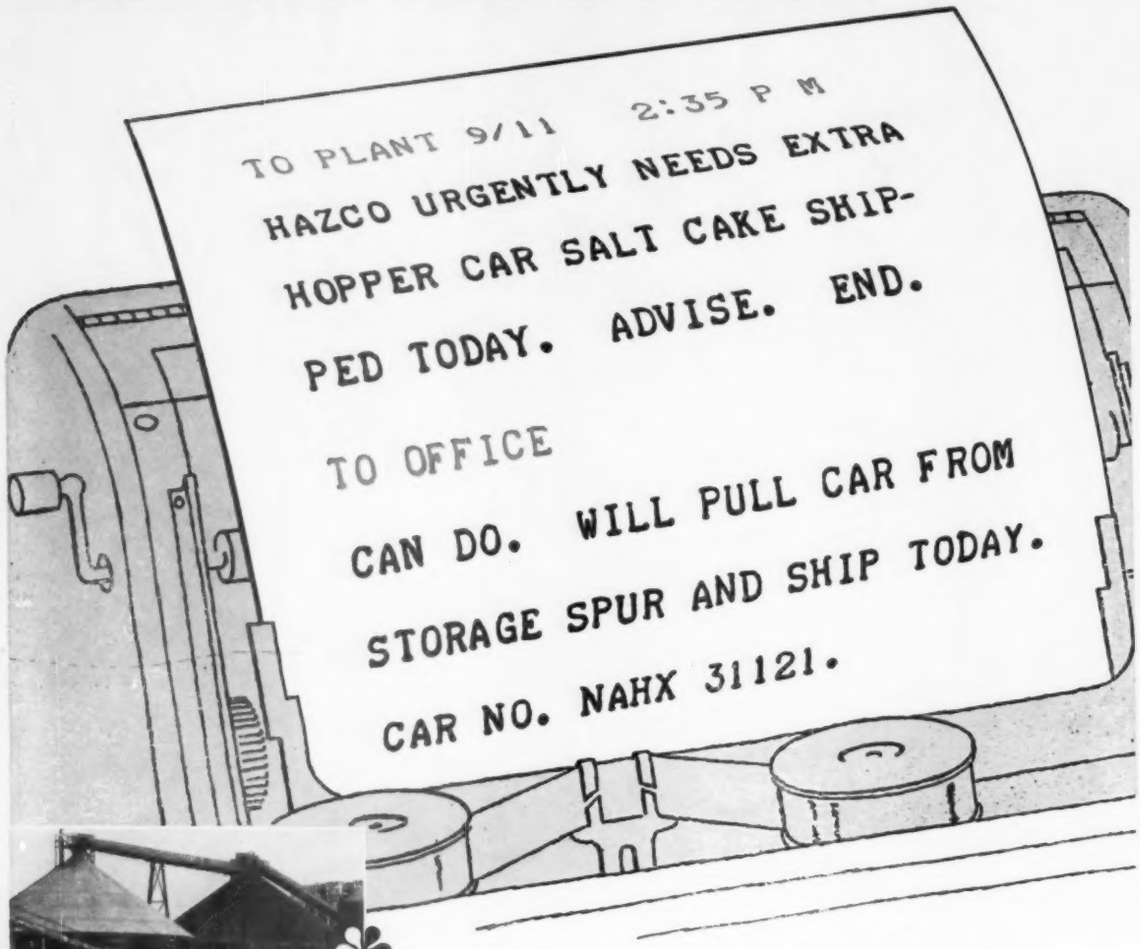
TO PLANT 9/11 2:35 P M
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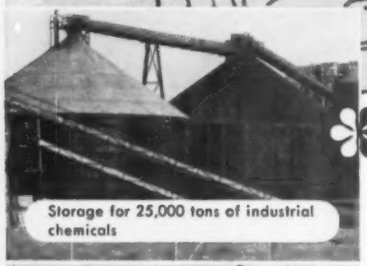
TO OFFICE
CAN DO. WILL PULL CAR FROM
STORAGE SPUR AND SHIP TODAY.
CAR NO. NAHX 31121.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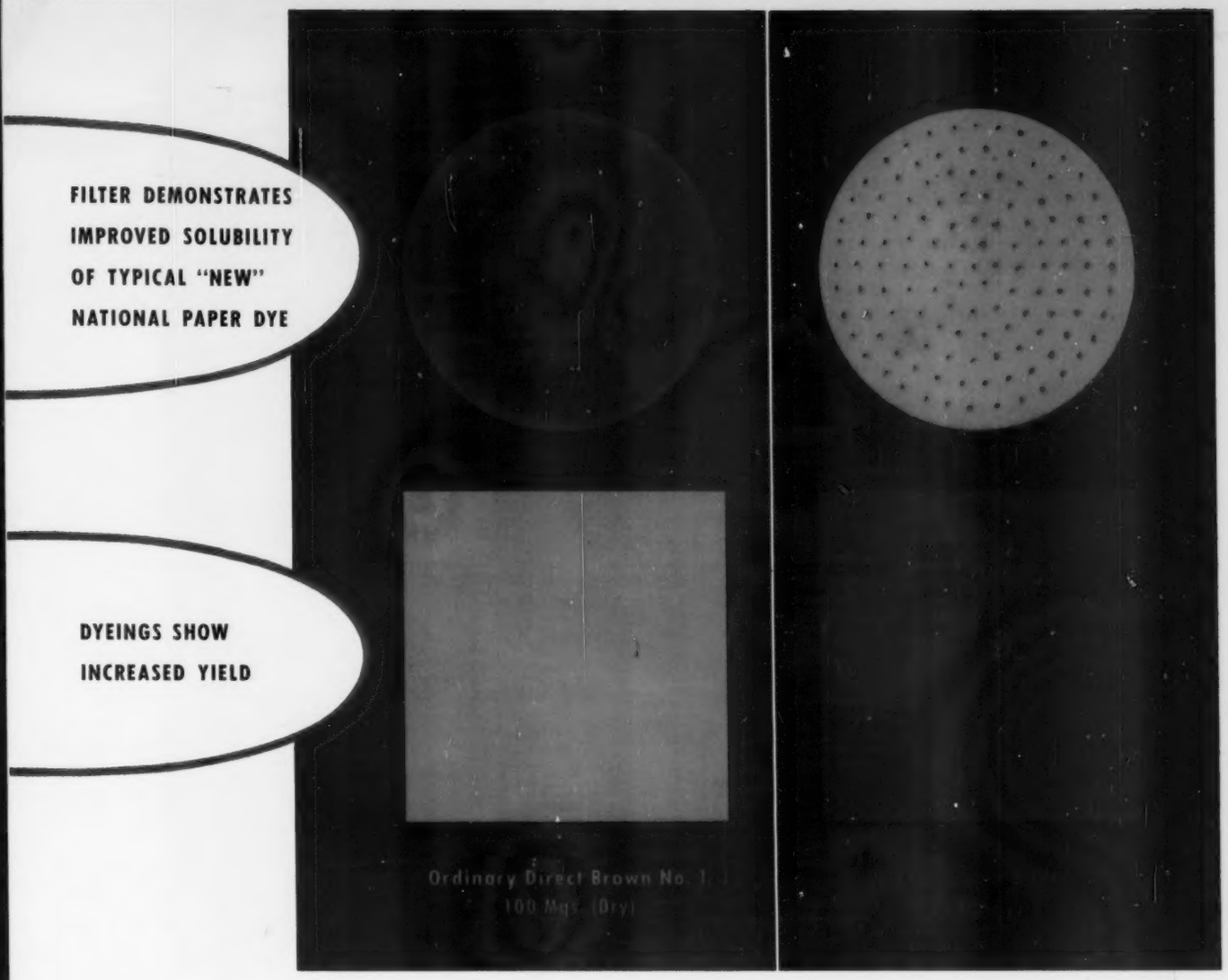

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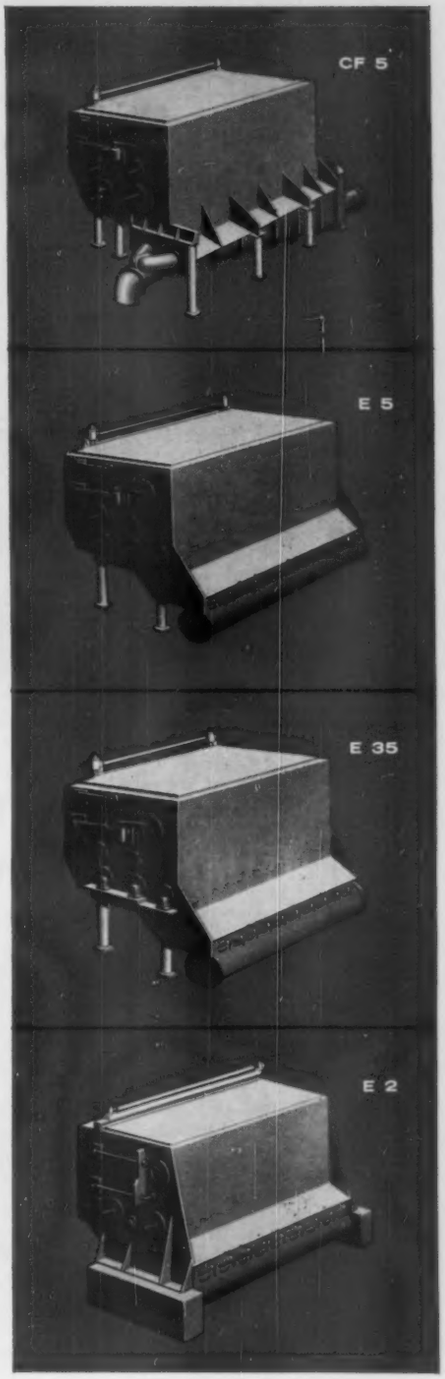
Basis weight and caliper erratic?
Flow "skating" on Fourdrinier wire?
Formation streaky or lumpy?
Insufficient head for machine speed?
Frequent headbox washups necessary?
Sheet tests marginal?

Beloit Air-Cushioned Inlets ...4 types to help solve your wet end problems



If you are troubled by any of these common problems, it will pay you to replace your obsolete inlet with a new Beloit Air-Cushioned Inlet. Beloit inlets are now available in *four* distinct types . . . suitable for every grade, speed, and price range . . . engineered to your exacting requirements. Beloit Air-Cushioned Inlets include these features: positive stock level control for optimum flow conditions • micrometer-type adjustment with flexible slice lip • simplified precision slice-adjusting mechanism • edge control • effective foam-killing showers • variable speed rectifier rolls • adjustable throat • rugged stainless steel construction • Beloit custom controls • self-cleaning design.

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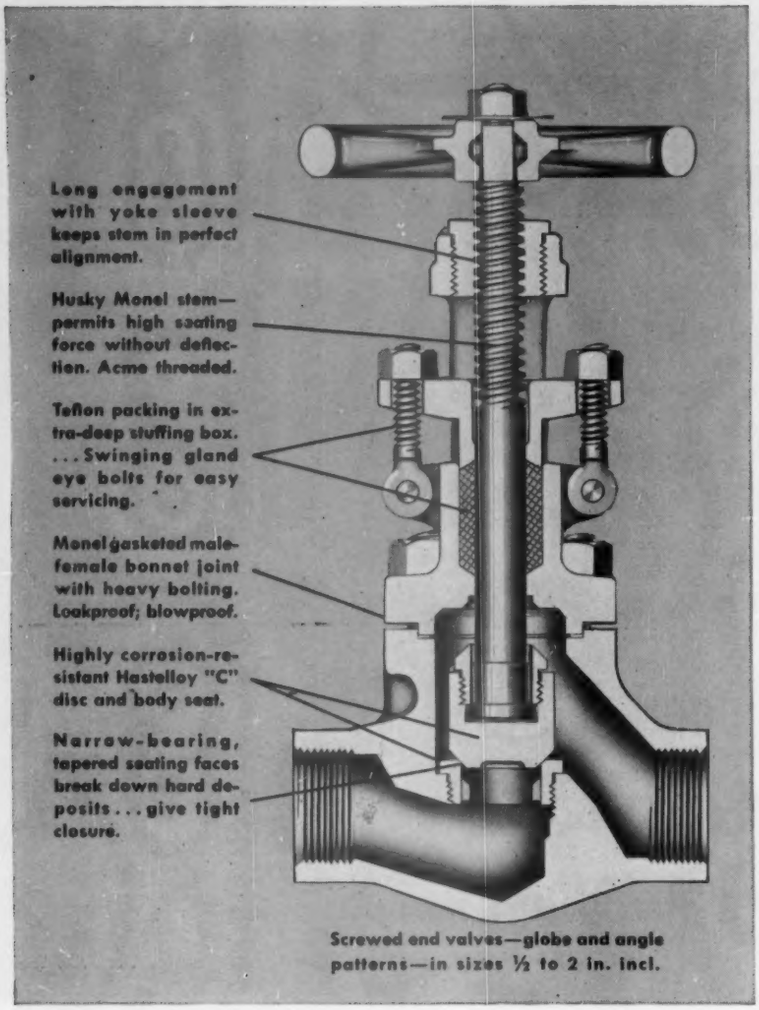
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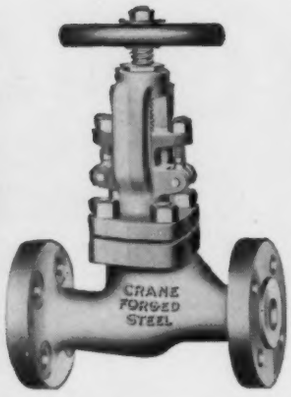
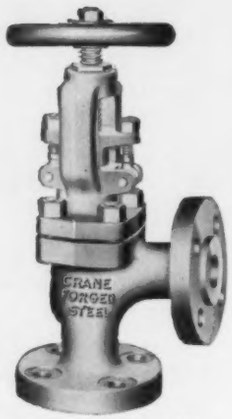
Husky Monel stem—permits high seating force without deflection. Acme threaded.
Teflon packing in extra-deep stuffing box. . . . Swinging gland eye bolts for easy servicing.
Monel gasketed male-female bonnet joint with heavy bolting. Leakproof; blowproof.
Highly corrosion-resistant Hastelloy "C" disc and body seat.
Narrow-bearing, tapered seating faces break down hard deposits . . . give tight closure.

Screwed end valves—globe and angle patterns—in sizes ½ to 2 in. incl.



Flanged end globe valve—in sizes ½ to 6 in. incl.



Flanged end angle valve—in sizes ½ to 2 in. incl.

NEW! Crane chlorine valves now in sizes up to 6 in.

Performance-proved over many years in sizes up to 2 in., these *engineered-for-chlorine* valves are now available in larger sizes with flanged ends—2½, 3, 4 and 6 in.

Many features put these valves head and shoulders above any other for gas or liquid chlorine handling. There's extra strength where needed in the steel body and integral bonnet and yoke. The bonnet joint is gasketed with Monel and heavily bolted; it's leakproof and blowproof. A deep stuffing box with Teflon V-ring packing insures long-life stem seal.

Disc and body seat ring are Hastelloy "C" for tight seating with high corrosion resistance. Narrow-bearing, 45-degree taper seating design and the husky Monel stem easily break down any hard deposits on seat faces.

Choose these valves for all water-free chlorine gas or liquid services up to 300 F. They're ideal for chlorinating lines in chemical processing and bleaching, treatment of water and sewage, etc. Get complete specifications from your Crane Representative or write to address below.

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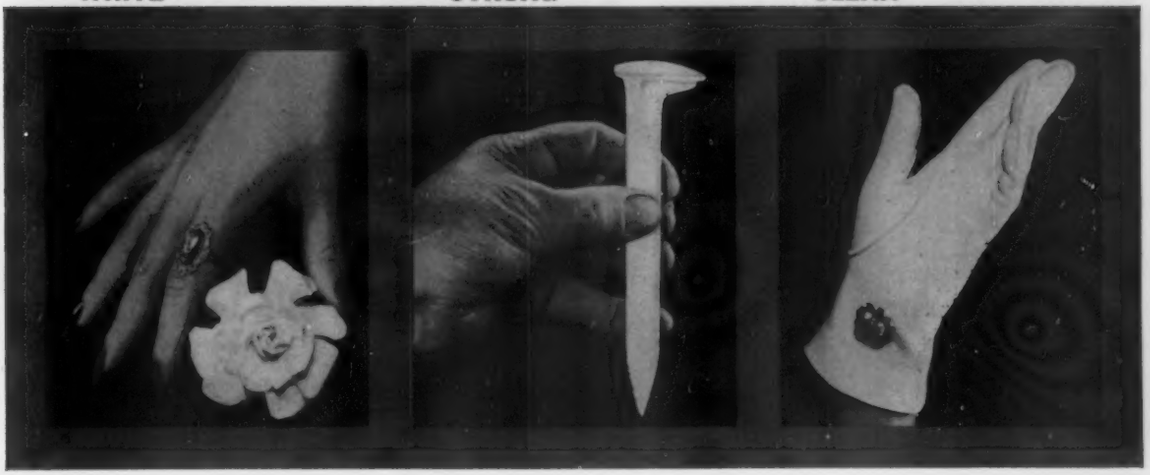
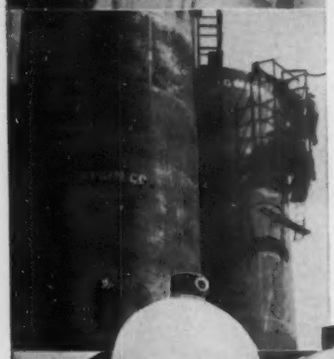
Bleached Sulfite Pulp

PUGET SOUND PULP & TIMBER CO.
BELLINGHAM • WASHINGTON

WHITE STRONG CLEAN





At Weyerhaeuser's new sulphite mill:

CB&I-built Digesters and Accumulators

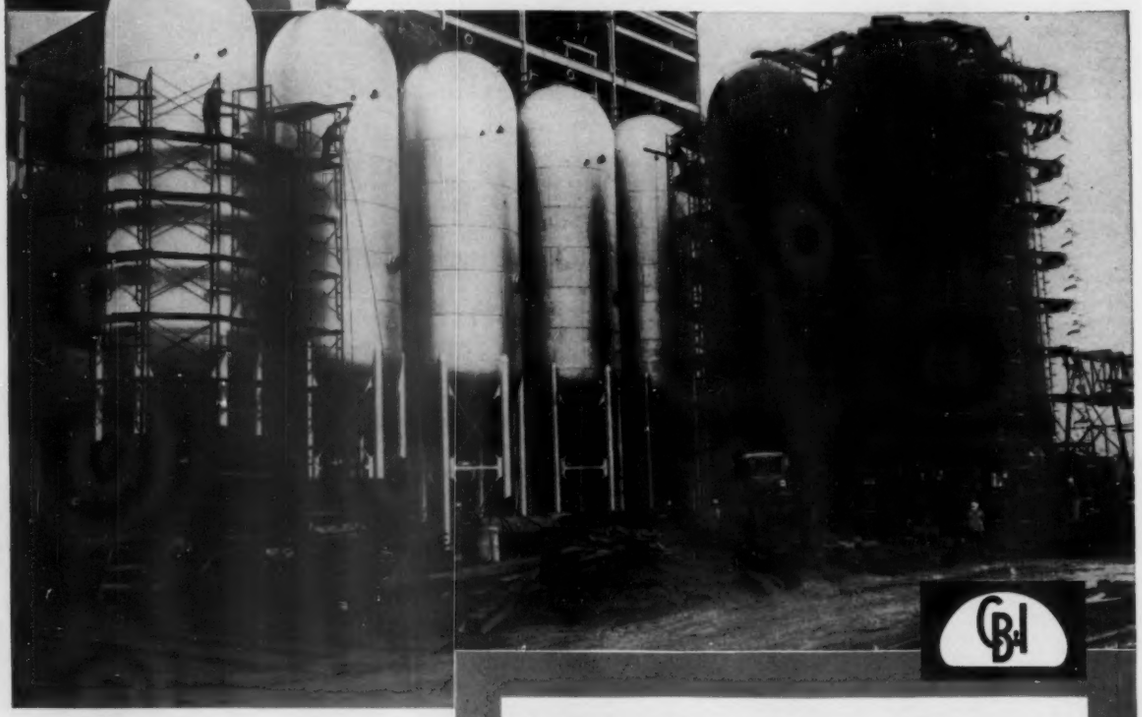
are field erected and stress relieved

CB&I Field Services *went to work* at Weyerhaeuser's new 400-ton sulphite pulp mill—recently completed at Cosmopolis, Washington. The 7 CB&I digesters and 4 accumulators were stress relieved in the field. All welds were similarly checked by specially designed, non-destructive X-ray examination equipment.

By erecting as well as fabricating structures such as those completed at Weyerhaeuser, CB&I is able to offer its customers an exceptionally high degree of quality control between the shop and field. Our field service program offers experience, equipment and on-the-job know-how to handle your most specific requirements. Write our nearest office for the new bulletin on *Field Erection Services.*

Top: CB&I specialist uses portable X-ray machine for examination of seam welds.

Left: Automatic (patented) girth welder being adjusted for welding circumferential joints on accumulator.



Left: 60-foot high digesters are 17 feet in diameter.

Right: Four accumulators have 1,290 cubic foot capacity each.

PP22

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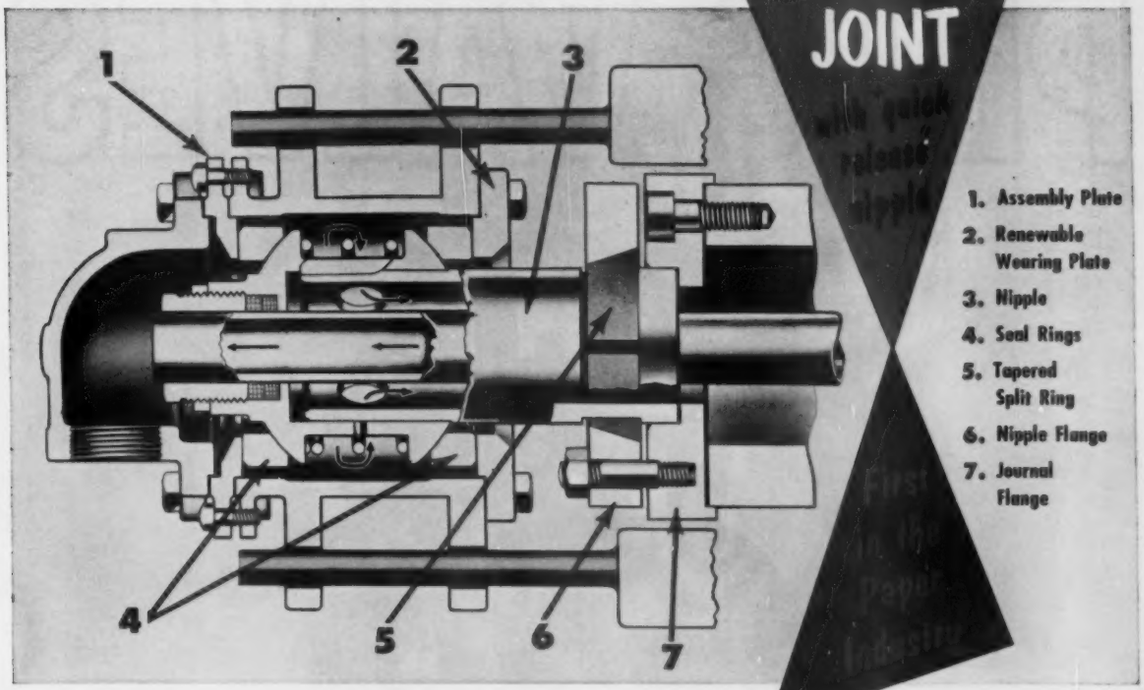
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

This one's got everything

. . . FOR HIGH SPEED PAPER MACHINES WITH ROTATING SYPHON PIPES

SUPER
Type L-NARQ
JOHNSON JOINT
with quick release nipple



1. Assembly Plate
2. Renewable Wearing Plate
3. Nipple
4. Seal Rings
5. Tapered Split Ring
6. Nipple Flange
7. Journal Flange

Simple, Time-Proved Design—Has the famed packless seal perfected by Johnson, needs no lubrication or adjustment. Internal assembly has just a few simple parts, which means fewer breeding places for trouble, easier field servicing. Assembly plate provides ready access to syphon pipe.

SUPER Construction—Teams "Green Streak" seal rings, of much harder and denser structure, with special Ni-Chrome plating on wearing surfaces. Result: Greatly improved friction characteristics and much longer service life.

Floating Action—Simple rod supports carry all the weight of the Type L body and connections—permit the rotating assembly to "float" freely inside. Can be adapted for machines with open or enclosed gearing.

Quick Release Nipple—Utilizes powerful wedging action to lock nipple securely to journal. Greatly simplifies installation and removal—ends danger of damaging nipple with heavy wrenches.

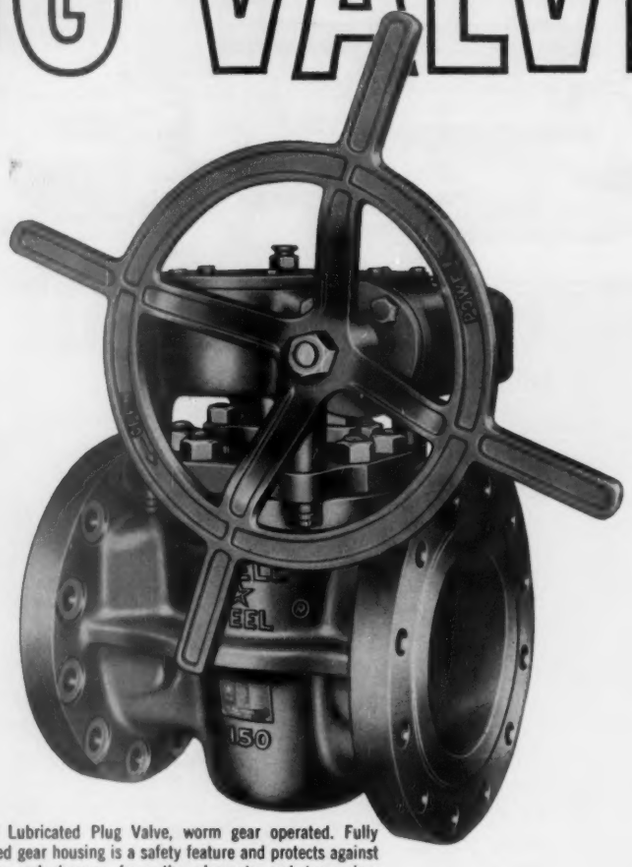
Johnson Joints come in types and sizes for all needs. Our offer still stands—try a pair in your mill for 90 days without obligation.

For full information on the Type L-NARQ write for copy of Bulletin N-2002.

THE JOHNSON CORPORATION
WOOD STREET • THREE RIVERS, MICHIGAN
Rotary Pressure Joints • Direct Operated Solenoid Valves

POWELL

LUBRICATED PLUG VALVES



Powell Lubricated Plug Valve, worm gear operated. Fully enclosed gear housing is a safety feature and protects against injuries and damage from the elements and tampering.

Like all Powell Valves, Powell Lubricated Plug Valves are superior in their field . . . and have many advantages over conventional types of Valves:

- Simple design: Only three basic parts—Body, Bonnet, Plug.
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- Tapered plug assures positive seating.
- Machined surfaces of plug and body are not exposed in open position.
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Powell Lubricated Plug Valves are available in sizes ½" through 16", depending on the type required—Semi-steel 175 and 200 pounds WOG; Carbon Steel ASA 150 and 300 pounds.

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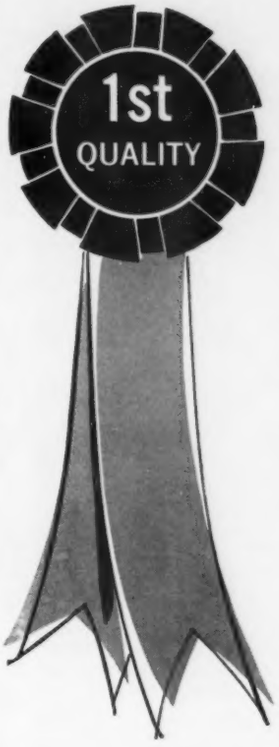
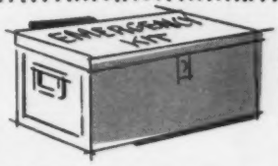
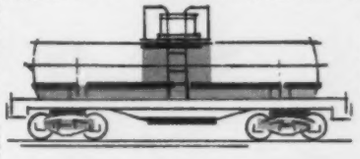
PRODUCT You get chlorine made by America's foremost producer of alkalies. Outstanding in a line that has set the industry's standards!



SERVICE You get the help of chlorine specialists in Solvay Technical Service working on your problems. Fast aid and expert literature in the use, handling and storage of chlorine for textiles, paper, water, sewage.



SAFETY You get safety programs and equipment pioneered by Solvay. Emergency Kits you can buy or borrow for cylinders, 1-ton containers, tank cars. Safety wall charts displaying vital unloading, handling, first aid facts.



PACKAGING You get Solvay® Liquid Chlorine in the package most convenient for you. Tank cars—32,000 lbs., 60,000 lbs., 110,000 lbs. Multiple unit cars of 15 1-ton containers. 150-lb. cylinders.

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Please send me without cost these Solvay Technical Bulletins:

- ☐ #7—"Liquid Chlorine"
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- ☐ #12—"The Analysis of Liquid Chlorine and Bleach"
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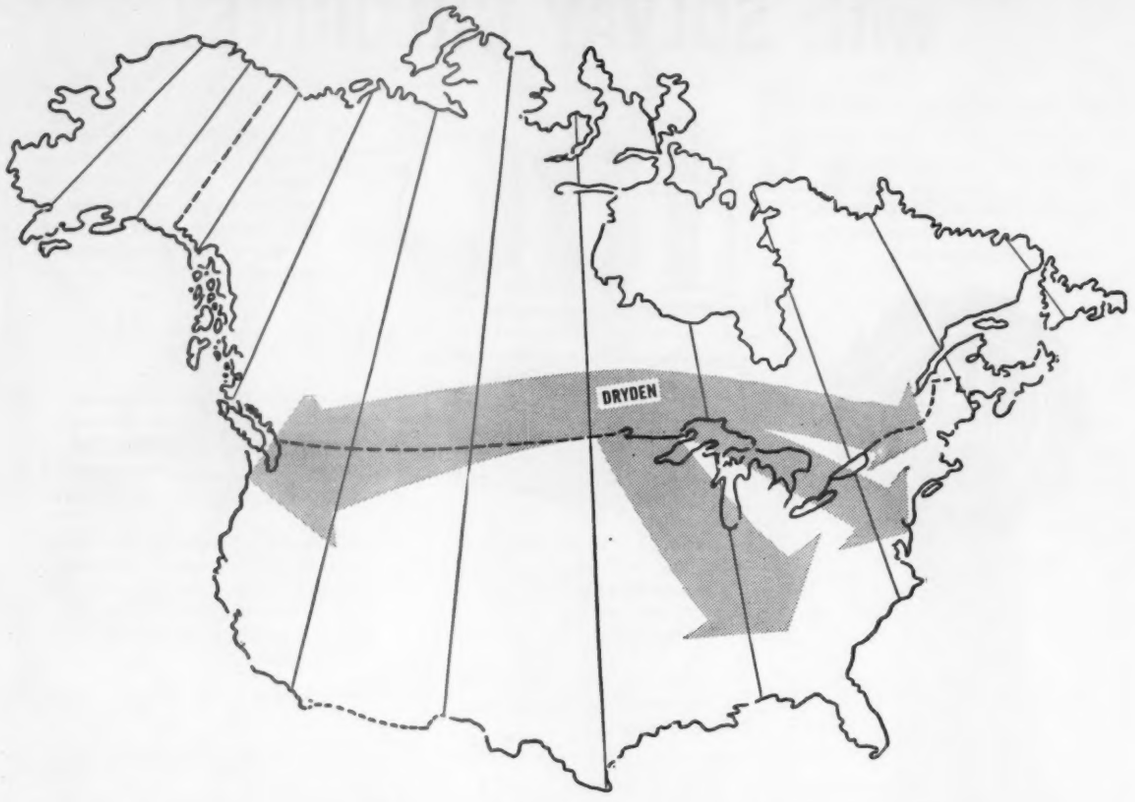
DRYDEN'S LOCATION ASSURES FAST DELIVERY



Dryden has long been known for its efficient Traffic Department...always ready to ship on a few hours' notice. And the shipments get to our customers in record time, because of Dryden's strategic location and proximity to major rail, highway and water routes.

A glance at the map makes it obvious why Dryden can and does make 4-6 day deliveries to the Midwest. But did you know that we also can give the same kind of service to our customers in Eastern United States and Canada? Dryden maintains inventories in boxcars, ready to go at a moment's notice.

Ask your laboratory to compare Dryden Bleached Sulphate with the best quality pulp you know. You, too, will say that it deserves all the endorsements—*and production testimonials*—it now enjoys. Order a trial shipment today. You will be amazed at how quickly you receive it.

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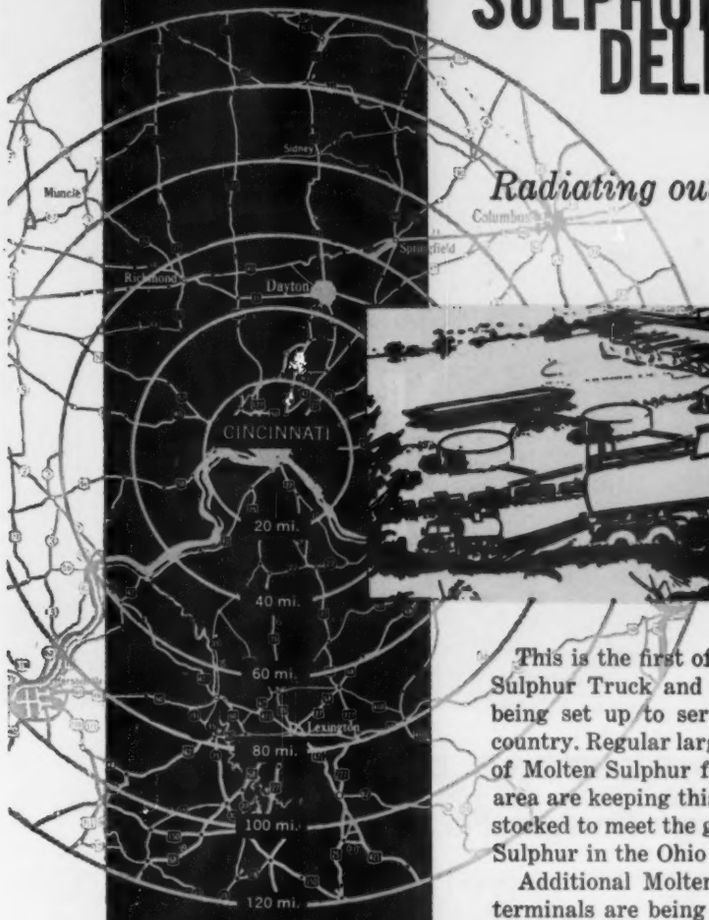
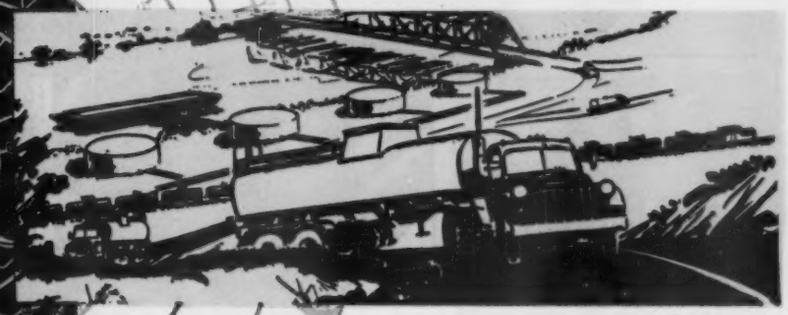
NOW.... PROMPT MOLTEN SULPHUR DELIVERIES

Radiating out from Cincinnati





This is the first of the TGS Terminal Molten Sulphur Truck and Rail Distribution Stations being set up to serve industrial areas of the country. Regular large tonnage barge shipments of Molten Sulphur from our mines in the Gulf area are keeping this Cincinnati Terminal well-stocked to meet the growing demand for Molten Sulphur in the Ohio River area.

Additional Molten as well as Solid Sulphur terminals are being considered for other parts of the country.

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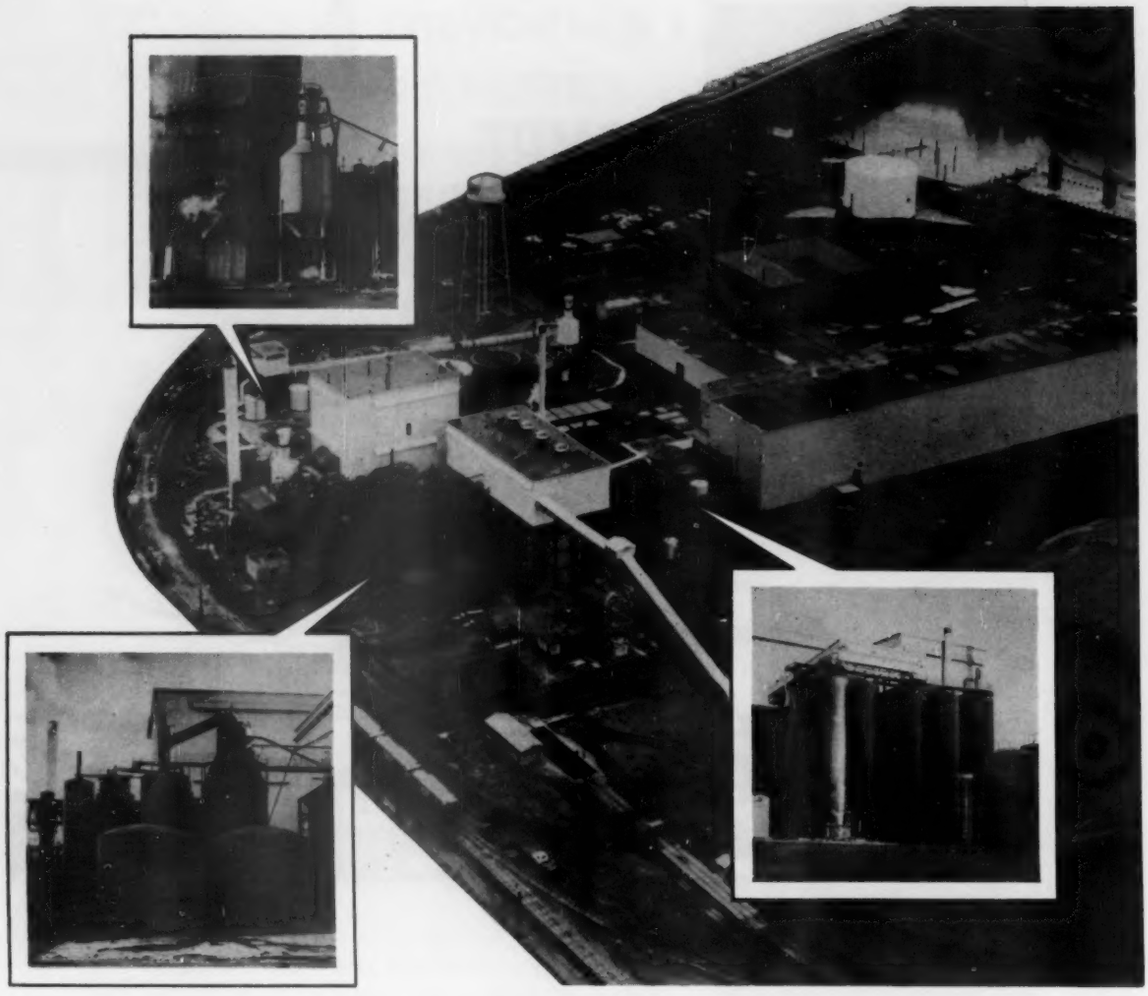
Sulphur Producing Units: Newgulf, Texas • Spindletop Dome, Texas • Moss Bluff, Texas • Fannett, Texas • Worland, Wyoming •

Molten Sulphur in tank *cars* can be delivered to any point in the States or Canada from our nearest mine or recovery plant. Barge deliveries of Molten Sulphur are available on all navigable inland waters. Solid Sulphur, as for many years, is deliverable all over the world. Large inventories at our mines assure industry it will get its supplies when needed.



TANKS AND DIGESTERS BY AMERICAN

in the huge Georgia-Pacific Mill

American Pipe and Construction Co., supplied all the steel tanks and digesters as well as the piping, stacks, and miscellaneous steel items required for the Georgia-Pacific Paper Company's 100,000 ton Kraft mill at Toledo, Oregon.

YOU can save money, time and trouble by taking advantage of American's 35 years of experience serving the Northwest as designers, fabricators, and erectors of steel plate installations.

An American sales engineer can be helpful to you in planning your next job.

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Do you have a corrosion problem that requires the protection of a heavy duty coating *plus* a degree of thermal insulation? You can solve it efficiently and economically with a *single* coating—*Insul-Mastic 553.*

This tough, durable mastic contains a high percentage of granulated cork. Applied to a ⅛" thickness, it will reduce heat loss through steel plates 40 to 65% . . . and provide excellent condensation control.

Because it is formulated with mica and a high percentage of Gilsonite, Insul-Mastic 553 is virtually unaffected by acids, alkalis, moisture and weather. It can be spray-applied in one continuous, uniform coating to metal, masonry or ceramic surfaces.

Refrigeration tanks, metal roofs, piping and metal sidings are just a few of the places where you can stop corrosion, reduce heat losses and prevent condensation with Insul-Mastic 553. *Call your Pitt Chem Distributor for full information and recommendations, today!*

PITT CHEM Industrial Coatings are available through leading Industrial Distributors. See the "Yellow Pages."

★ PITT CHEM "Insul-Mastic"® Gilsonite-Asphalt Coatings
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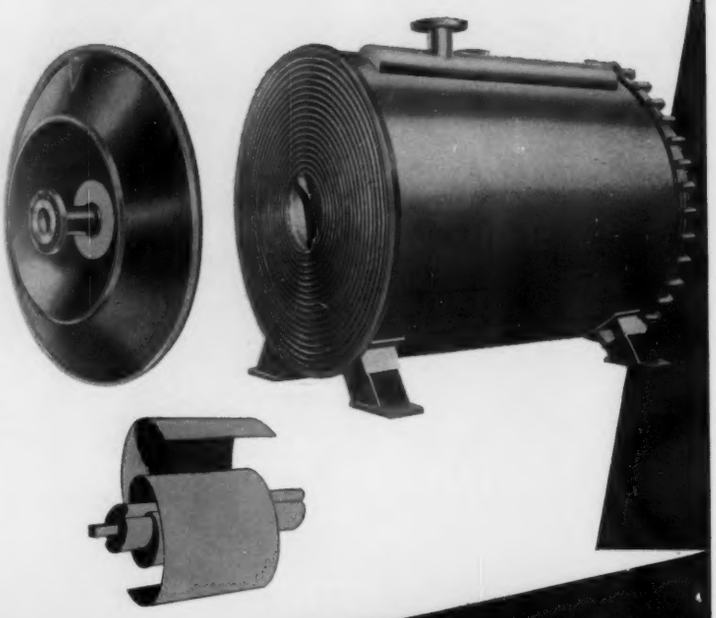
A HIGH PERFORMANCE EXCHANGER WITH A *SELF-CLEANING* CHARACTERISTIC!



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Spiral Heat Exchanger
A wrapped-up assembly of two parallel plates that is:

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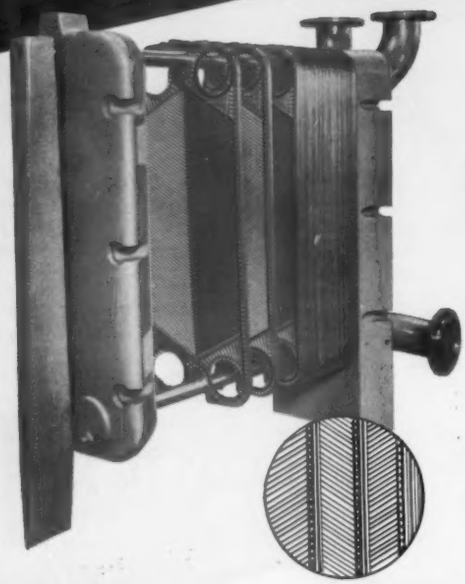
Impossible to achieve? No...

THESE UNITS PROVE THAT EXCEPTIONAL PERFORMANCE CAN BE ROUTINE!



A RUGGED PLATE-TYPE EXCHANGER FOR *INDUSTRIAL* USES!

ROSCO Plate Heat Exchanger
Its exclusive plate design and rugged construction provide:

- Operating Pressures as High as 175 PSI.
- Extremely High Heat Transfer
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REPRESENTATIVES IN PRINCIPAL CITIES

DRAMATIC MOMENTS IN PAPER-MAKING PROGRESS

Aubrey Crabtree, President of Fraser Paper, Ltd., and Mill Manager J.W.D. Hierlihy are shown here "center stage" in one of the paper industry's most exciting events—the first run of a newly rebuilt machine. In their hands is paper produced by their Fourdrinier machine, which was completely rebuilt by Pusey and Jones and is now in service at Fraser's Madawaska, Maine, mill.

It has a completely new Fourdrinier, a 228" wire width, 100' 0" wire length, 2000 fpm speed, and was preassembled at the Pusey and Jones plant for faster installation and on-time start-up. A vacuum pickup arrangement and an after-dryer section with completely enclosed gearing were added.

Pusey and Jones, the first company in the United States to specialize in the manufacture of paper-making machinery, continues to pioneer with such developments as the Automatic Air Guide System® and a new Differential Hydraulic Drive. May we help you with a complete machine or a component specially designed for your needs?

THE PUSEY AND JONES CORPORATION

WILMINGTON 99, DELAWARE

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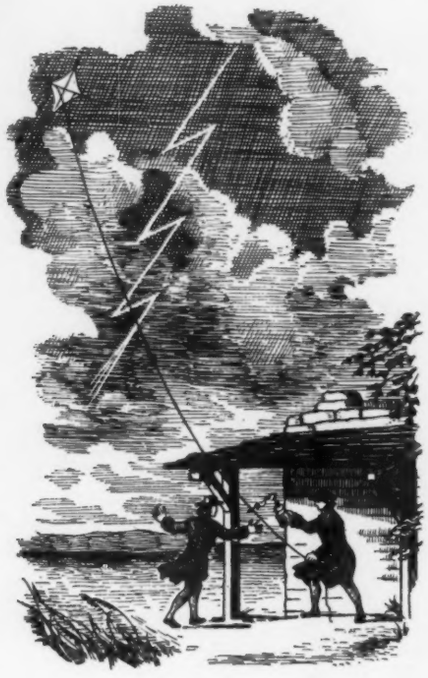
Fourdrinier Machines • Cylinder Machines • Yankee Machines • Slitters, Winders, Unwinders, Brakes • Mechanical Drives • Rolls • Dryers • Calender Stacks and Reels • Differential Drives • Automatic Air Guide System



BENJAMIN FRANKLIN—statesman . . . inventor . . . printer . . . man of letters—was one of the world's most versatile men. Molder of our Constitution, author and publisher of "Poor Richard's Almanack," he also captured lightning with a kite and key. His genius expressed itself in many ways. ALBERTA HI-BRITE® bleached kraft pulp—endowed with properties of strength . . . formation . . . brightness . . . cleanliness—is the world's most **VERSATILE** pulp. Alone or in blended furnishes, it can help perfect the quality of nearly every grade of white paper made.

St.Regis PAPER COMPANY

PULP SALES OFFICES: NEW YORK • CHICAGO • SAN FRANCISCO • TORONTO • MONTREAL

Which of these 3 products and services can you use from BECCO?

New Cold Caustic Bleach Process

Looking for a way to use greater amounts of low-cost, more plentiful pulp—without capital investment for bleach equipment? Then let a Becco Sales Engineer show you our new technique* which allows you to bleach in the same equipment regularly used for the manufacture of cold caustic pulp.

In this new process, peroxide bleach liquor is added at the Bauer Refiner, and bleaching occurs during the refining operation. Bleach response depends on refiner densities.

Up to 20 points brightness increase has been obtained in commercial operations to date, and with no additional steam costs, no holding time, and no excessive chemical costs.

Becco can assist you immediately in setting up a production run and evaluating results. First step: use the coupon to let us know you're interested.

BECCO fmc

BECCO CHEMICAL DIVISION, FMC
Station B, Buffalo, New York

Dept. PP-H

Gentlemen:
Please have a Sales Engineer give me more information on Becco's Cold Caustic Bleach Process.

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Need a Bleach Plant in a hurry?

By now, you've probably heard about Becco's Dryer Steep Bleaching Process for insuring brightness permanence by spraying Hydrogen Peroxide across the pulp sheet ahead of the dryers. And you probably know that although the process is patented, Becco will grant a perpetual license for just $1.00.

But there may still be a question in your mind as to how you can prove this out in your own mill—how you can set up a bleach plant in a hurry.

Becco has the answer to this, too. We'll be glad to provide you with a complete "bleach-plant kit"—for as long as you need it—consisting of all the equipment needed to make up peroxide bleach liquor and spray your production sheet.

Here's an opportunity for you to prove to yourself, quickly and easily, that this Becco process will maintain your layboy brightness level — even improve it — through shipping and delivery.

If you'd like to take us up on this offer, drop us a line, or mail the coupon below. And of course, even after we demonstrate, you incur no obligation.

BECCO fmc

BECCO CHEMICAL DIVISION, FMC
Station B, Buffalo 7, New York

Dept. PP-J

Gentlemen:
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NAME_____

FIRM_____

ADDRESS_____

CITY_____

ZONE_____ STATE_____

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You can have 'em!
They're FREE!

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- **No. 32 – H_2O_2 Bleaching of Chemicals and Mechanical Pulps.**
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- **No. 64 – Development Studies on Last-Stage H_2O_2 Bleaching of Alkaline Pulps.**
- **No. 65 – Peroxide Bleaching of Southern Pulps.**
- **No. 66 – Becco Laboratory Procedures for Pulp Bleaching, 1955 Ed.**
- **No. 91 – Peroxide Bleaching of Chemi-Mechanical Hardwood Pulps.**
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BECCO fmc

BECCO CHEMICAL DIVISION, FMC
Station B, Buffalo, New York

Dept. PP-G

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Please send me a copy of each of the following bulletins:

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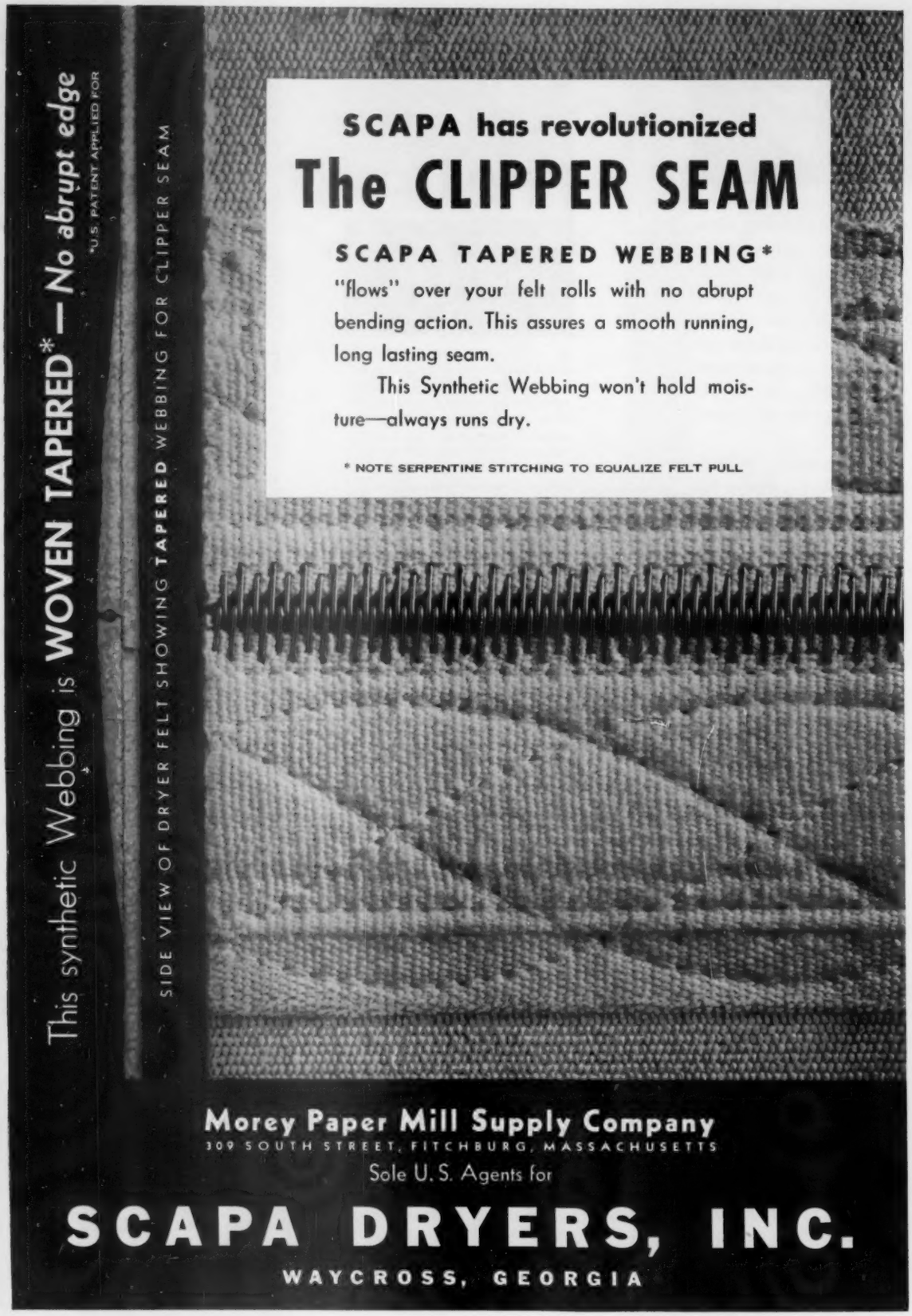
This synthetic Webbing is WOVEN TAPERED* — No abrupt edge
*U.S. PATENT APPLIED FOR
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SCAPA has revolutionized
The CLIPPER SEAM
SCAPA TAPERED WEBBING*
"flows" over your felt rolls with no abrupt bending action. This assures a smooth running, long lasting seam.
This Synthetic Webbing won't hold moisture—always runs dry.
* NOTE SERPENTINE STITCHING TO EQUALIZE FELT PULL
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CHLORINE DIOXIDE BLEACHED SOFTWOOD SULPHATE

CHLORINE DIOXIDE BLEACHED HARDWOOD SULPHATE

Balanced Paper-Grade Pulps Created by Papermakers for Papermakers

Throughout the world, papermakers use and like fine ... Albacel and Astracel ... pulps that provide the right balance of all important quality ... brightness, cleanness, strength, formability and proper bonding characteristics ...

RIEGEL PAPER CORPORATION

260 MADISON AVENUE, NEW YORK 16, N. Y.

Smears of size on glass show clarity of Ten-O-Film, right, almost invisible, compared with conventional starch, left.

Sure way to CLEAR, UNIFORM COATING

The highest degree of coating quality can be achieved with the new, improved Ten-O-Film starches.

These new starches possess unexcelled clarity, uniformity and film-forming properties. They are available in a series of fluidities to meet your exact requirements. Because of their high degree of viscosity stability at high solids, Ten-O-Film starches reduce setback and maintain adhesive strength, assure good performance. At lower concentrations Ten-O-Film starches assure superb structural film continuity and excellent results.

For technical assistance in selecting the TEN-O-FILM starch best suited to your needs contact our nearest sales office or write direct.

TEN-O-FILM® starches

Fine products for the Paper Industry: EAGLE® • FOXHEAD® • GLOBE® • TEN-O-FILM® and CLARO® starches. GLOBE® dextrines and gums.

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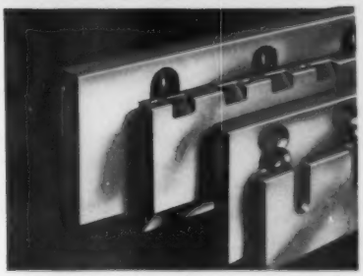
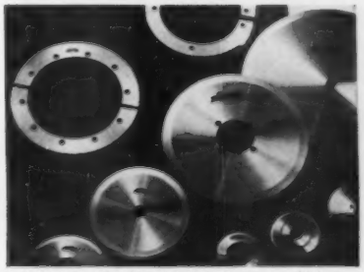
Now there's an all-new member of the Simonds family of knives, saws and files—the brand-new Simonds "Si-Namic" paper knife. Here's a knife that incorporates a brand-new steel mix — developed and produced in Simonds own Steel Mill — and a new finish. Combined, they offer you the sharpest, smoothest, longest lasting cutting edge available — and at competitive prices.

Add to this Simonds dependable chipper knives and circular cutters and you can see why, more than ever, your Simonds Industrial Supply Distributor is your number one source of supply for dependable cutting tools.



Simonds T-18 chipper knives are extra tough for giving you more heavy cuts at high speed, for more usable chips and less waste dust.



Whether it's the thinnest tissue or thickest board, Simonds circular cutter, slitters and perforators cut smoothly, easily, truly. There's no better value for your cutter dollar.

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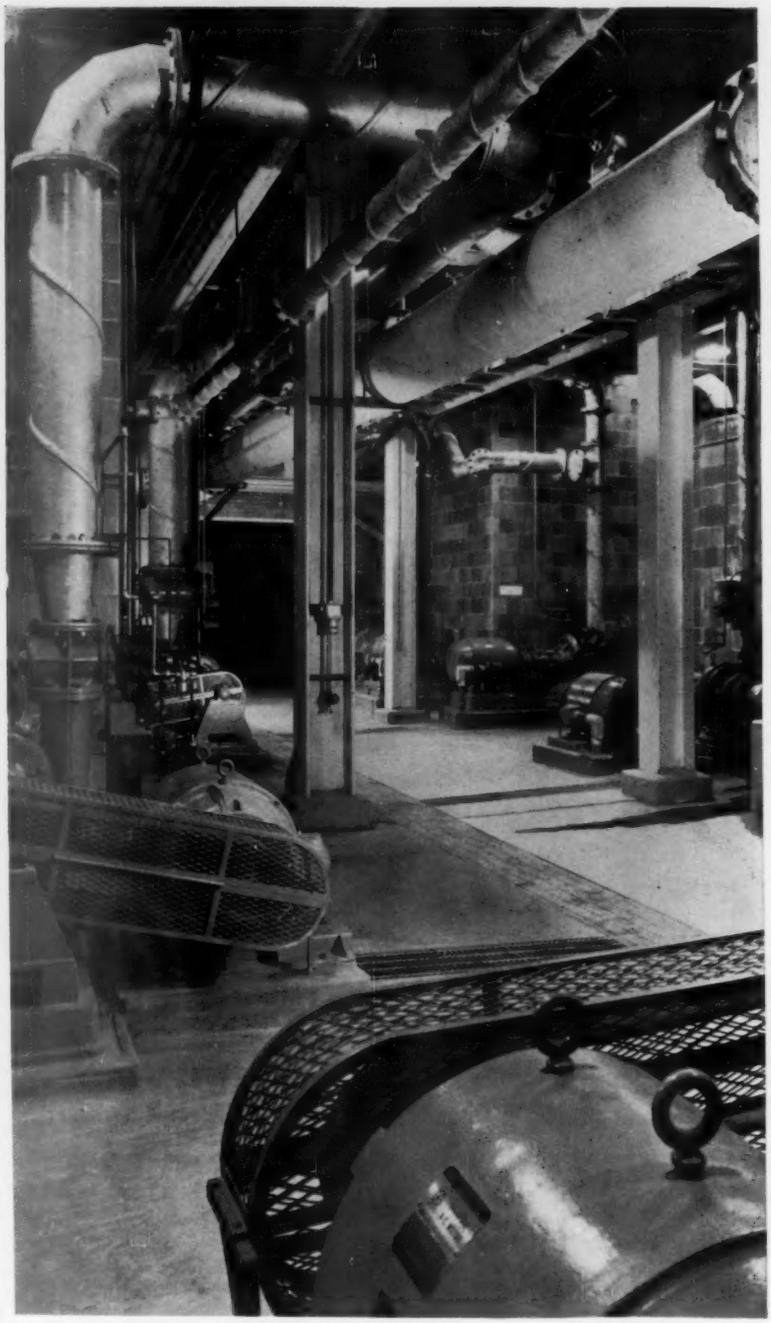
HOW NAYLOR PIPE CAN FIT INTO YOUR PIPING LAYOUT



There are three areas in which NAYLOR can help you on your piping layouts—with lightweight Spiralweld pipe, standard fittings and special fabrications.

- NAYLOR pipe comes in sizes from 4″ to 30″ in diameter and in wall thickness from 14 to 8 gauge. Standard lengths of 20 and 40 feet, or furnished cut to exact length specified.
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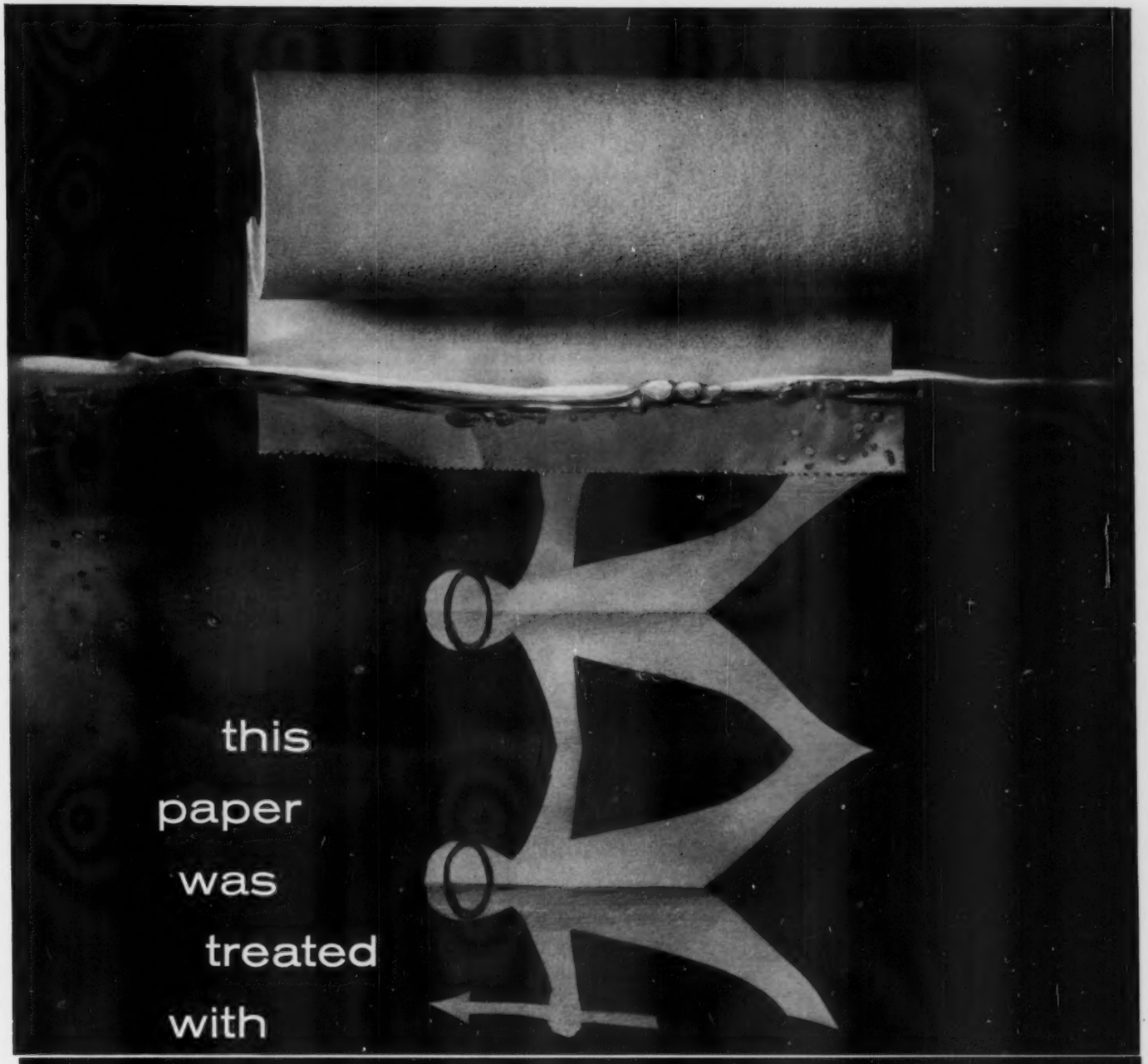

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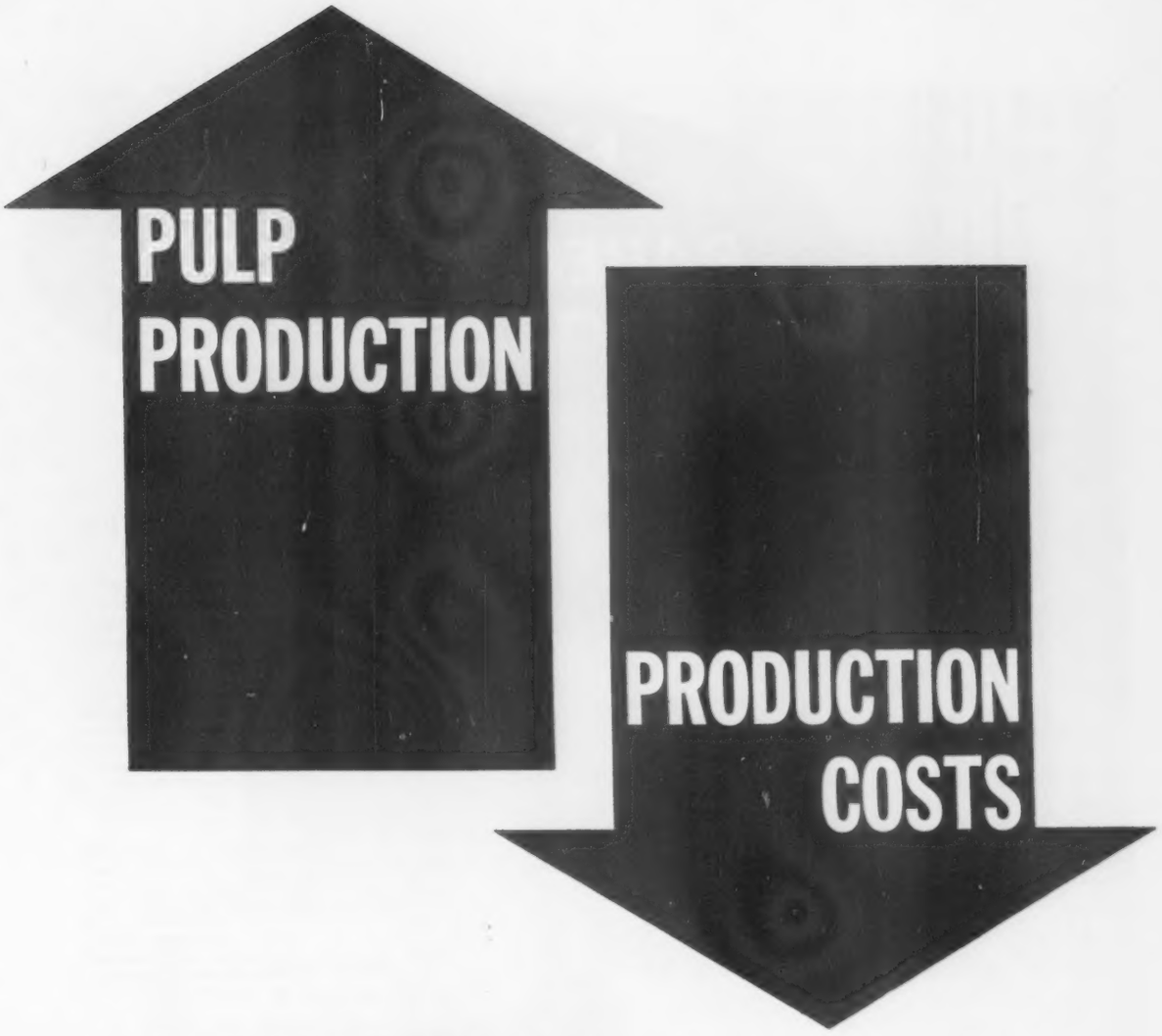

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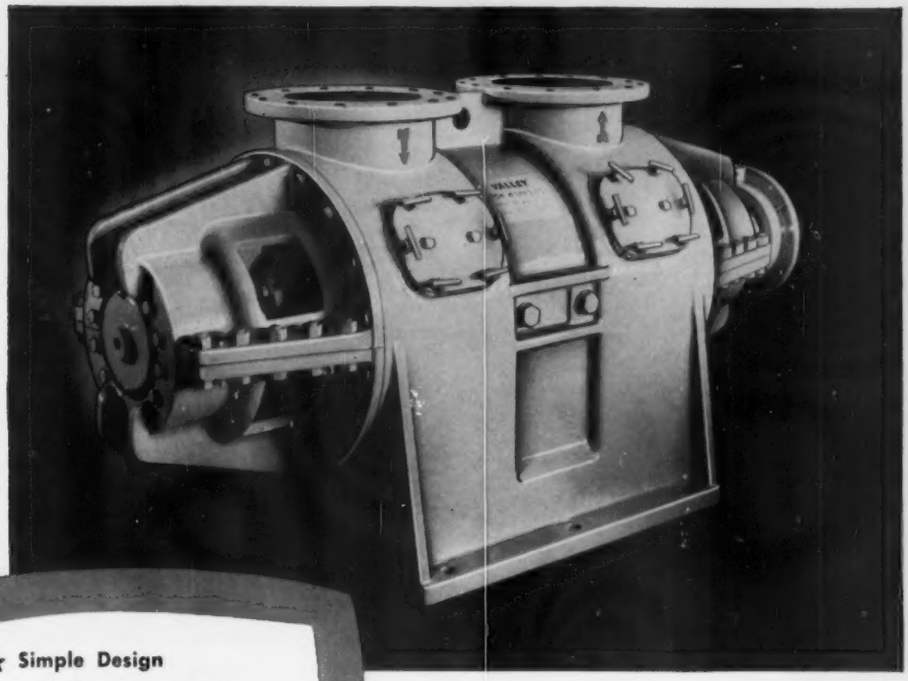
a machine specifically designed for defibering pulps



★ Simple Design
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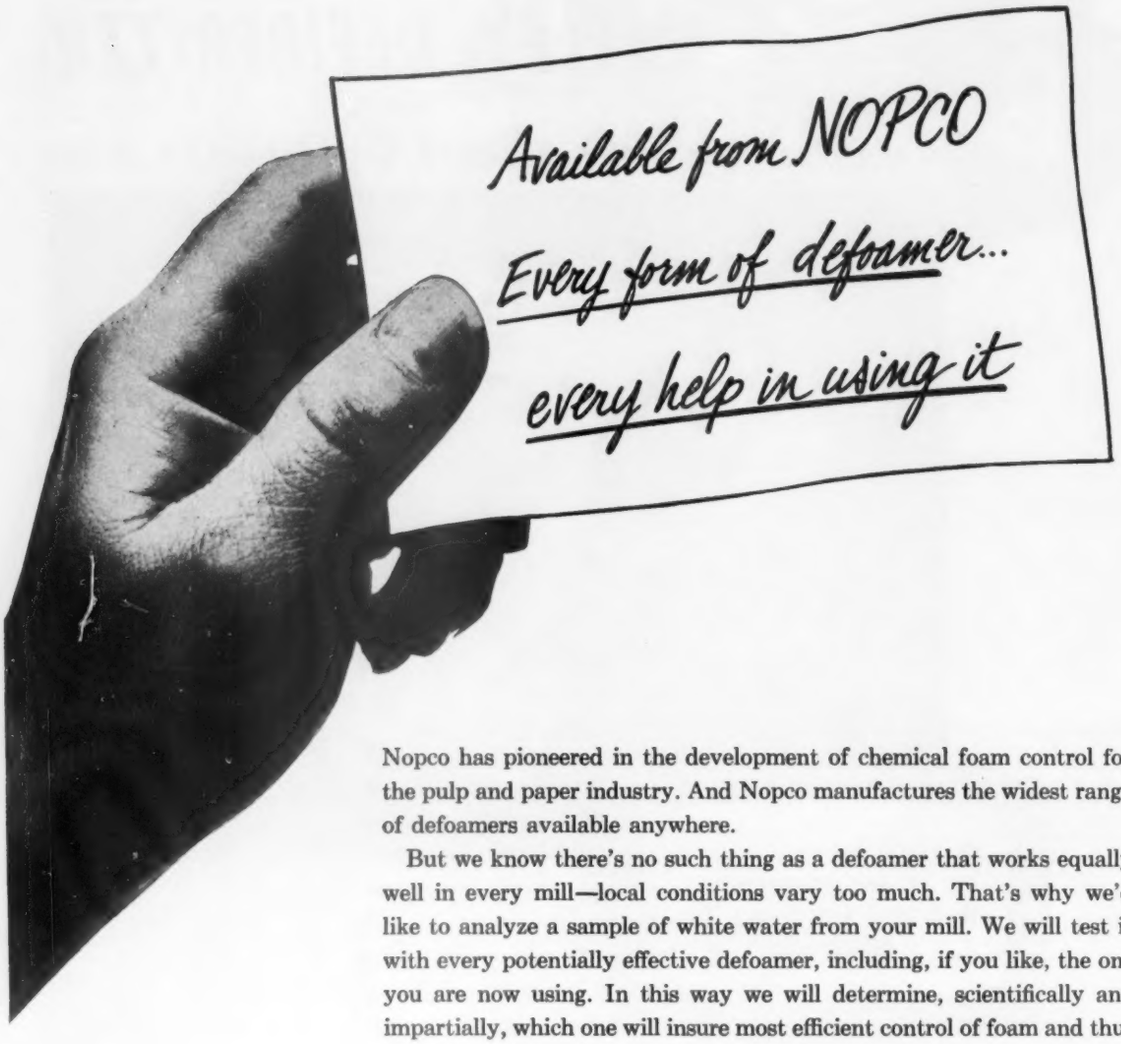

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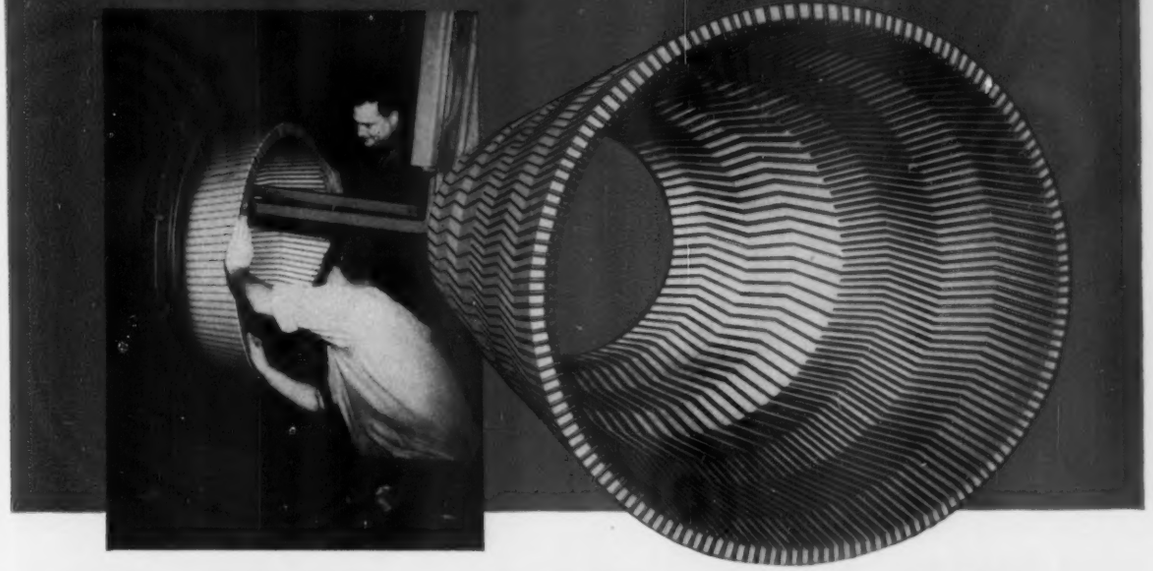

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HOW THE SOUTHWORTH LIFT TABLE* *improved roll handling* AT INTERNATIONAL

Photos
Courtesy of
International Paper Company

The flexible and economical rewinder loading installation, illustrated here, simplifies the mechanical handling of the heavy roll. In addition, the roll is readily placed into the bearings and locked into position without any undue jarring of the shaft and roll stand.

This is another example of how Southworth works with plant engineers to improve materials handling, cut costs by bettering the use of existing production equipment, and minimize waste . . . to say nothing about reducing accident hazards caused by chance, manual strain or fatigue.

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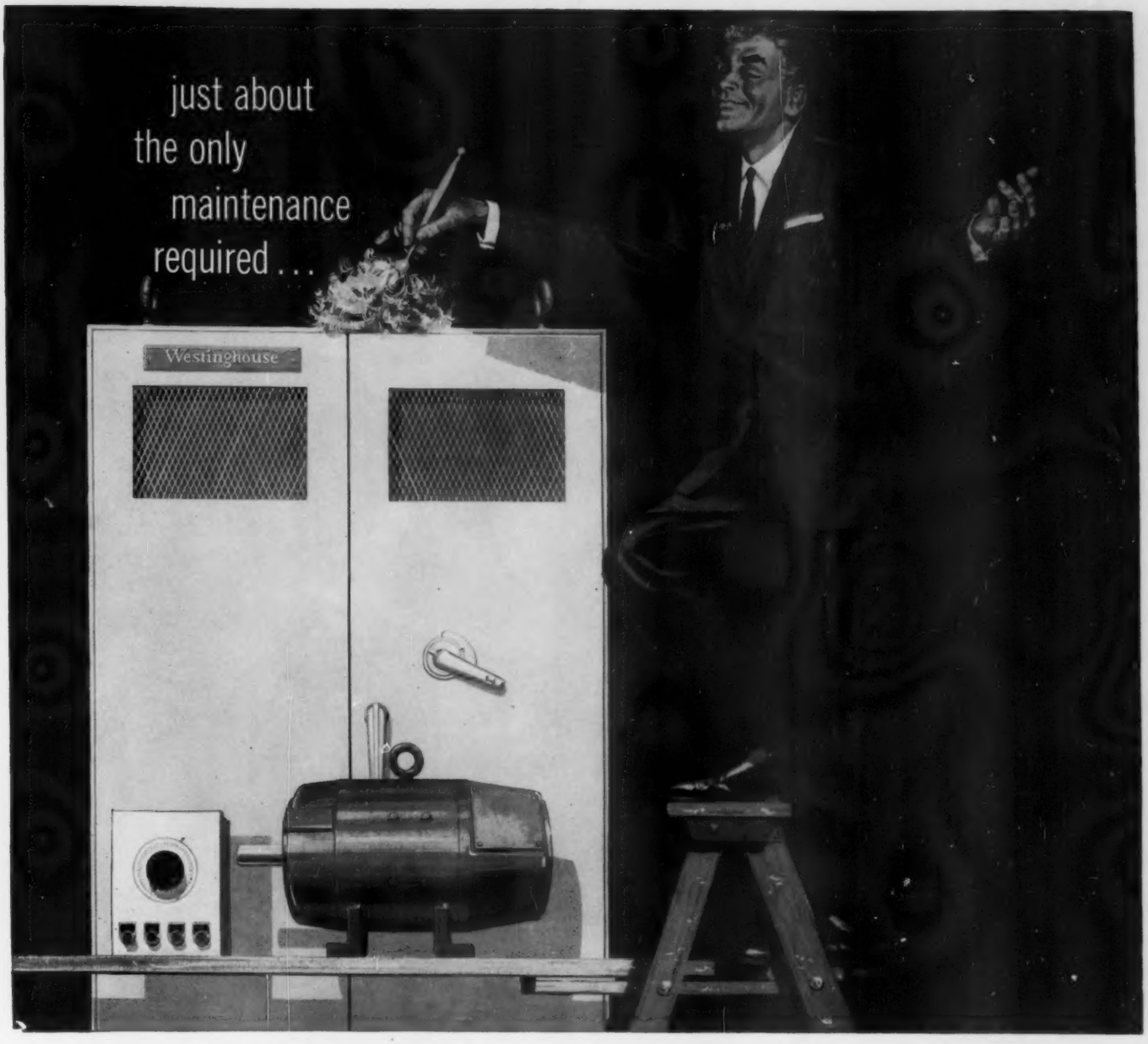

New Type AVR static-powered adjustable-speed drive

With the new Westinghouse static-powered AVR adjustable-speed drive, maintenance costs are virtually a thing of the past. Power magnetic amplifiers replace the conventional motor-generator set . . . there are no moving parts to weaken from wear and fail . . . you enjoy all the proven benefits of static control components.

Providing smooth, stepless speed control, new AVR drives are designed for use with motors from 1 to 200 hp . . . give you constant torque over an 8 to 1 speed range, or 10 to 1 with modification . . . are also available with constant-horsepower speed ranges.

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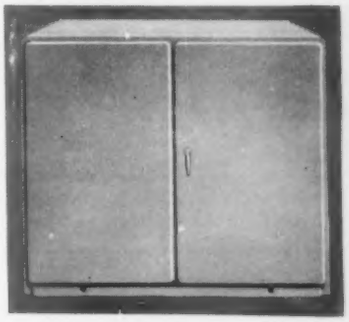
Ask your Westinghouse sales engineer to show you exactly where and how you can benefit from new Westinghouse adjustable-speed drives. Or, write Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pennsylvania. J-22144

Also available . . . the new, redesigned motor-generator Type AV drive with new silicone-insulated Life-Line® "H" d-c motor, new electronic regulators which simplify maintenance, and positive-pressure ventilation for longer, trouble-free life.



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DISCHARGES WITH NON-PULSATING FLOW REGARDLESS OF VARIATION IN SUPPLY!

- Cannot Become Airbound!
- Operates with Little or No Submergence
- Maintains Constant Liquid Level with Varying Supply

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Available in a wide range of capacities. Call your nearest Bingham office for full information, or write for Bulletin 36.

Bingham SINCE 1921

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Editor Reports on Europe

- Expansion in every land
- Printing is struck a blow
- A boom in straw pulping
- Another British pulp mill?
- Trucks replace river drives
- "Outer 7" and "Inner 6"

By ALBERT W. WILSON
Editor, PULP & PAPER and
PULP & PAPER INTERNATIONAL

—Glasgow, Scotland

• This is the jumping off place for your editor at the end of a tremendously interesting and informative 100-day long odyssey through the paper industries of 13 nations. It began at French industry headquarters on Boulevard Hausmann, Paris, and with visits to two mills near the French capital. Then, in the kaleidoscope of travel, flashed scenes and faces in Spain, both the Southern and Northern Italian industry, the French Alps, Switzerland, from south to north of West Germany, Belgium, Russia (Moscow, Leningrad and a little mill town near the latter city), Finland, Sweden as far north as its Midnight Sun Land, Norway, Holland for the Eu-Ce-Pa and TAPPI meetings, England and Scotland, and many mills and many, many more industry leaders along the way.

After all this travel, one cannot escape the reality of powerful forces which are going to raise paper use standards and paper consumption throughout all of these countries. Nowhere else in the whole world will there be such growth of the paper industry. In every one of these countries, extensive expansion programs are under way to meet the rising consumption rates.

I should add that my impressions and information were gained not only from industry leaders in the countries named above—I also met and talked with leaders from Greece, Hungary, Yugoslavia, Egypt, Australia and Morocco. It is impossible to spend over three months visiting offices of industry leaders or their mills in Europe, without encountering travelers from other lands, too.

It all adds up to a story of growth which will be very intense in the next several years. The big developments will be in packaging of all kinds, fiberboard, cardboard, bags, tissues of all kinds, newsprint and printing papers. With the springing up of corrugating plants, linerboard salesmen in Europe are almost as frequently seen as pulp salesmen.

Costly Printing Strike Felt by Many British

Temporarily, a labor dispute in which they were not a party, forced shutdowns and slowups of mills and machines in Britain. This resulted from the disastrous nationwide printing strike and it gave every indication of being a long bitter test of strength, as this is written. Even if it were over when you read this, the effects will be long felt.

At the outset, the strike closed down about 3,000 publishing firms and printing establishments as well as about 70 daily and 1,000 weekly newspapers—the so-called provincial press. Very soon, however, the national press also was affected, although it was not a party to the dispute. This is because the printing ink industry workers cut off ink supplies, and immediately the 10 big British national newspapers, with combined circulation of more than 45 millions, drastically reduced their number of pages—mostly down to 8 pages, trying to eke out what ink they could get hold of. Much news and much advertising was cancelled out and—as this was written—they apparently had only a few days to go.

Most of the newsprint for national newspapers comes from Canada and Scandinavia, so this did not greatly increase the blows already suffered by the paper mills. At least one paper mill already had shut down completely, another was on a 3-day week, and many machines were stopped as print shops, publishers and small papers were struck. As for newsprint, Britain makes only about 20% of its needs. Bowaters makes about 13% of this, and Peter Dixon & Son and the Reed Paper Group split the remainder. But now it is likely many Christmas books and autumn books will never be published. Check-book printing, notices, financial reports, tickets of all kinds, etc., were threatened. Printed wrapping for all kinds of packaging would be affected. This printing could not survive a long strike.

The union, among the oldest and most militant in Britain, struck for a 10% wage increase and 40 hour week. Ironically, the provincial papers already have the 40 hour week and their pay rates are among the highest. Sixty-five newspapers have ceased to publish since 1956 because of rising costs. Employers proposed arbitration but the unions rejected it, one leader questioning the impartially of all arbitration.

A shocking development occurred when reporters from a few small papers which managed to keep publishing a sheet or two, were barred from city council sessions in at least two cities; also when one union leader threatened to close up all government printing if police didn't keep hands off strike disorders.

After the fourth week, the threat to the national newspapers abated when union leaders agreed to let them import ink from the Continent.

EDITOR'S REPORT . . . linerboard grows . . . new machines ordered

Bright Side in Britain

Now looking to the brighter side of the paper picture in Britain, I can report that a trained investigator for one of the biggest companies says the demand for paperboard to package foods will double in five years. A veteran director of another big company said. "Watch for more paper requirements for all kinds of woman's magazines." Kimberly Clark-Reed and Bowater-Scott have wasted no time in each installing their second tissue machines within a year or so after their first started up. New ones are built by Bertrams Ltd. and by Walmsleys, respectively. And on the Continent, paper company partnerships with other important local paper companies are being formed or mills are being bought to make more tissue in Belgium, France, Germany and—soon—in Italy.

Straw Pulp Mill Boom

One of the most interesting developments in Europe is the trend to augmenting fiber supply by building new straw pulp mills—using rye, wheat and other kinds of straw. A group of Danish farmers were touring the Dutch straw mills—they want to build a cooperative one of their own. Hungary is building a straw mill and this will be the raw material for the new mill in Egypt being built by German equipment manufacturers. France and Germany may be expected to make more straw pulp. Straw pulp was the theme of the recent Eu-Ce-Pa and TAPPI meetings and fine quality of pulps and papers may be expected to result.

Machines for Russia and Allies

Russia has ordered three paper machines from Sweden, two more from France and others from Germany and Austria. In Europe I crossed the paths of sizable purchasing delegations from China, Yugoslavia and Rumania—they were buying paper machines in Finland and Germany, perhaps in another country. Yugoslavia, I heard, ordered nine paper machines in one week!

Important Board Development

One major development in Europe which has caused many eyes to pop and tongues to wag is the news of immediate plans for construction of four large linerboard and corrugating material manufacturing plants in Sweden and Finland. Such a tremendous expansion in this type of paperboard indicates strong confidence (and no doubt, advance information) in regard to converting plants on the Continent. In this respect, the Finns are fast winning a strong reputation for making some of the finest linerboard in the world.

Even Norway, with its limitations, is not going to be left behind. It plans a kraft pulp mill in the north to use Finnish wood, also a small semi-chemical pulp mill on the west coast.

In paper, Norway started up a new Voith newsprint machine recently (Union Paper Mills) and plans two new kraft machines, one at the Ranheim company's Thune mill and the other for Peterson Paper Co.

Britain—Another Pulp Mill?

Bowater has the building completed for two more machines at its Thames division, but these have not been ordered. No. 6 newsprint machine will start up at its northern Mersey mill, and its No. 5 there started up a year ago—both Walmsleys machines with Millspaugh pickups and both for newsprint. These are both 272-in. deckle and it appears as though Bowater will stay with that width for newsprint for some time. A similar machine started up two years ago at its Kemsley mills, also a 272-in. Walmsleys with Beloit headbox and Milspaugh pickup for press section.

There are now very reliable reports in Britain that two or three of the biggest paper companies on this island are talking about a joint semi-chemical or kraft woodpulp enterprise in Scotland. Of course, the question is: Can they be assured of enough wood supply from private owners and state? They are watching closely the progress of the Wiggins-Teape venture at Sudbrook, Wales, the first chemical woodpulp venture in modern times in the British Isles. Capacity of this mill will be raised from 20,000 to 30,000 tons next year. It is, of course, only small supplementary source of chemical pulp supply and so far, is admittedly losing money. Other companies are keen to know how far Wiggins, Teape will have to go for wood, how difficult it will be to gain a continuing supply.

Some Scandinavian Trends

Since my last report, I have noted the great expansions going on in Finland and Sweden and some of this has been published. Sweden has an oversupply of wood in its southern areas around Stockholm—believe it or not. In the middle area there is a shortage of wood, but in the north there is ample supply. In Finland, recent surveys are far more optimistic than in past years and considerable expansion is possible for years to come. The use of birch for high quality bleached kraft pulp is definitely on the increase in Sweden—much more of this birch pulp will be available.

In Norway, high cost of wood is a problem. But I can explode an old canard of war years. Remember those stories published far and wide, saying the Nazis were overcutting the timber in Norway? Not true at all—in fact, less wood was cut. Much undergrowth was cut out during those years for fuel improving timber stands.

A very important trend in Sweden and in other northern areas is the decrease of river driving. This is fast becoming a lost art. It is rapidly being replaced by truck-hauling of timber. Trucks are more and more in demand for pulpwood logging. The rivers are too busy and occupied with other activities, and besides it is getting harder to find capable river-drivers.

Common Market and Outer Free Trade Area Talk

What about the European Common Market and the proposed Outer Free Trade Area? The former has just barely started; its effects will not really be felt till the further overall tariff reductions of 2% goes into effect next January. Very knotty problems have seemed for the time to have stalemated either extension of the Common Market to the "Outer Seven" countries or the alternate plan for a separate Free Trade area for these nations—Britain, Norway, Sweden, Denmark, Austria, Switzerland and Portugal.

The British paper and paperboard industries are one of the relatively few industrial groups in this country which definitely does not want any part of the outer Free Trade area, expressing fears of Scandinavian competition. There is no duty on newsprint here; other paper and board tariffs range now from 14 to 17%.

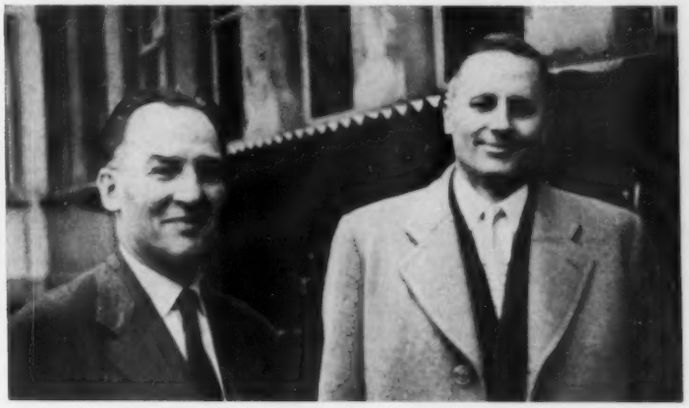
In 1957 Britain imported paper and board from the Continent to the value of 44 million pounds sterling, and of this, 36 million came from Scandinavia. Britain exported only six million pounds worth of paper and board to the European Continent. British paper industry leaders are dubious of advantages in a combined Free Trade area—the Outer Seven joining the Inner Six. But they definitely are alarmed

Continued on page 60

Here and There in Europe . . . .

from the album of
Editor Albert W. Wilson,
on his tour of 13 countries

SR. DON RAFAEL CHAPA GALINDEZ, deputy director general of Papelera Espanola, which makes one-third of the paper manufactured in Spain in its several mills, shown here with his wife, in picture taken by the editor. He foresees a steady growth of the industry in Spain.



FRIENDS IN FRANCE. . . . PROF. MARCEL ARIBERT (left), genial technical director of the French School of Papermaking in the famous University center of Grenoble. **GERARD ESCARFAIL** (right), director general of Papeterie de Moulin Vieux, Pontcharra-sur-Breda, near Grenoble. The Editor spent a weekend at his and Mrs. Escarfail's home, built in the walls of an 11th century monastery. Prof. Aribert once risked his life to save a Polish student (who was also a Polish army officer) from execution by German invaders in the war, hiding him in the laboratories.

FRANCO GOVERNMENT plans building of three new mills in Spain and the technical expert in direct supervision of these plans is **SR. DON JULIO MOLLEDA FERNANDEZ-LLAMAZARES,** shown smiling here for the editor's camera. He is a graduate of the pulp and paper school at New York State College of Forestry, Syracuse, N.Y., U.S.A. These mills will be at Malaga (based on bagasse), at Huelva (based on eucalyptus) and on the coast north of Portugal (based on pine). Sr. Molleda is technical director of the official Comision Gestora de la Celulosa in Madrid.

FRANCESCO PASTINA, technical director of Ente Nazionale Cellulosa e Carta, an association created by the government to assist in building up the national supply of newsprint. He is editor in Southern Italy for PULP & PAPER INTERNATIONAL. He showed new extensive laboratories now used by his association in outskirts of Rome. It is very well equipped with pulp and paper making laboratory equipment.

HIS FAVORITE LITERATURE . . . You can see for yourself that **HARALD VOIGT,** who represents Weyerhaeuser, Anglo-Canadian, Drydern and other market woodpulp manufacturers in Western Germany, and who lives on a Taunus hillside overlooking the city of Frankfurt, enjoys reading his copy of PULP & PAPER INTERNATIONAL.

over the new idea of a separate Outer Seven free area.

The Scandinavians, they say, would still be subject to duties in the Common Market. Therefore, there would be a strong inducement to divert exports to Britain. Paper and board exports to Britain by Scandinavia totalled 417,000 metric tons in 1947, as compared with 760,000 tons to Common Market countries. If newsprint be excluded, on the ground it already enters Britain free, then the figures are 285,000 and 438,000, respectively. In addition, Britain imported 101,000 tons from Austria, whose exports to the Common Market were substantial. This means a great deal could be diverted here, say paper mill directors I talked with.

These Scandinavian figures, however, include Finland, whose close proximity to Russia seems to have excluded it from consideration in the outer group. Finland's share in these figures are 234,000 tons to Britain and 289,000 to the Common Market—both substantial portions.

These arguments do not take into account that Scandinavian shipments to the Inner Six cannot be quickly replaced or cut off; but at the same time they do not account for Scandinavian expansion, which we know is occurring.

British Demand Up 4% Each Year

Meanwhile, the demand for paper and paperboard goes on increasing about 4% a year in Britain. This is about the same figure I previously reported from West Germany, for that country. Last year Britain produced 3,360,000 metric tons of paper and board; of this 664,000 was newsprint. About 1,400,000 tons (excepting newsprint) is made from imported pulp and here is where any diversion from the Common Market might make its greatest impact.

The output of kraft paper in Britain has been doubled in the past ten years. In all its paper grades, Britain has invested 125 million pounds in the 1951-57 period, and half of this in 1956-57. The kraft and the paperboard mills of Britain feel they would stand the biggest risk in an Outer Six, which it is felt, could be diverted.

Of course, such diversions could not happen rapidly. Perhaps this only serves to point up the greater desirability for the original idea of a large combined Free Trade Area or Common Market of all 13 nations. Right now, though, there is little enthusiasm for it anywhere here or in the Inner Six. In some places I have heard it called a "dead issue."

However, many private or unreported conferences and discussions are going on—I ran across meetings of French and Scandinavians in Stockholm, other groups are meeting or have met in Brussels and Paris. In these continuing searching discussions—un-exposed to the glaring light of publicity—is perhaps the best chance for an amicable and constructive solution of the problems, beneficial to all the nations involved. It seems certain all parties will have to compromise—they may have to give and take quite a bit—before the final European economic plan is evolved.

Soviet's Pulp Markets

. . . and plans for future trade, as told to the Editor in an interview in the Exportles Office in Moscow

By A. W. W.

Moscow

● The day I called upon President Vlas Nichkov of Exportles, who directs all Russian exports of wood products—logs, lumber, plywood, pulp and paper—was sunny and bright and the greeting I received from his secretary and, just a minute later, from him, befitted the day.

In the interview that followed, perhaps the most important statements were his emphatic contention that Soviet Russia has no intention of dumping its pulps on any markets and his prediction that it "will never be a first class exporter" of woodpulp.

Also, for many years to come—despite the projected yearly 9% expansion of its pulp and paper manufacturing under the new Seven Year Plan, Mr. Nichkov expects Russia will still cut a substantial amount of raw pulpwood to ship to France, Germany and other countries "for as far ahead as this generation can foresee," he said.

Vlas Nichkov, who has pulp and paper acquaintances in many countries, has offices in a top corner of a five-story office building on Kiubysheva, in a central area of Moscow. Part of the building appeared to be used for warehousing with adjoining business offices, and there were vast high-ceilinged halls and rooms, and an ample-sized old-fashioned elevator took me to his domain. I had looked forward to this meeting with much interest. I had been asked a half dozen times in different countries: "Of course, you are going to see Nichkov, aren't you?" or words to that effect.

I am sure that Mr. Nichkov was disappointed that only about an hour earlier—H. Djalilov, senior pulp and paper engineer of the Gosplan, Russia's State Planning Commission, already had made arrangements for me to visit a paper mill near Leningrad and the Central Research Laboratories in that northern city. I sensed that Mr. Nichkov himself had hoped to arrange these visits.

I also could have gone to a newsprint mill in Gorky, the great Russian industrial city, but it was shut down for two weeks for repairs, and it would have meant an 800-mile round trip to see an idle mill. I skipped it.

Sitting alongside Mr. Nichkov throughout the interview was his timber economist, V. Jakovlev, I took their picture together, as it appears on the opposite page.

Pulp Exports of 1959

"Russia will ship about 200,000 short tons of woodpulp this year to other countries, but mostly to the People's Democracies," said Mr. Nichkov. In 1958, the exports were close to this figure, but somewhat less. In 11 months of 1958 the shipments to Great Britain were 58,402

short tons (not 200,000 tons as "erroneously reported"). This was a substantial increase for Britain, but Mr. Nichkov was very insistent that the British do not feel that Russia is "dumping" and they "want to develop the business on a sound basis."

(Later I questioned some of the important pulp business leaders in Britain and they told me they felt Russian business there is on a sound basis, and criticized what they called exaggerated reports of this trade.

Deliveries of pulp to France, West Germany and Belgium have also increased quite sharply.

The principal pulp grades being exported by Russia are unbleached sulfite and unbleached kraft. A small part of bleached sulfite is being exported, added Mr. Nichkov. The sulfate is mostly from northern Russian mills. Solambala pulp from the Archangel area is a principal export.

Exports Slightly Exceed Imports

Before the war, Mr. Nichkov recalled, Russia was a net importer of woodpulp. Even now the margin of exports over imports is "very narrow."

Considerable woodpulp is still imported from Sweden and Finland. (From Norway, while I was in Oslo, an agreement with Russia to import about 7,000 tons a year was renewed.) All the pulp imported by Russia and its nearby associated countries totaled 245,000 tons in 1958, an increase of 73% over 1953. This all came from European mills.

Trade in Pulpwood

"Russia imports timber, too," said Mr. Nichkov, "even though we are at the same time exporting about 650,000 cubic meters of pulpwood to France, Belgium, West Germany, Italy, and—in smaller proportions—to the People's Democracies. In contrast to this, Finland exports 2,000,000 cubic meters annually (some to Russia) and Sweden exports substantial amounts of pulpwood. As for sawn goods, Russia exported 3,000,000 cubic meters last year."

Mr. Nichkov, formerly a forester himself, a stocky-appearing man who could handle himself well in the woods, said there are vast stands of spruce, pine, cedar and larch, to develop in the Siberian forests. He was a forest academy graduate in Russia.

Plans for Mills

Russia is starting to build 12 new pulp and paper mills this year, mostly in the Ural mountains area, but four using reeds for board will be built in the South. Next year and the year after, other new projects will be launched.

"But it takes a lot of moolah to build mills," said Mr. Nichkov, using a New Yorkese slang phrase for "money" which he learned in his years as a pulp and lumber salesman in the United States. He lived in New York from 1945 to 1948.

The cost of mills was a reason he gave for predicting that Russia would still have much raw timber to export.

Expects to Ship Timber to U.S.

"The time will come when the United States will want timber from Russia," he predicted. "It probably will be shipped across the Pacific from Siberia. Before the war we shipped logs to paper mills in U.S.A., including operations up the Hudson River Valley. Also, over 600,000 cubic meters of Russian lumber was shipped to Poughkeepsie, N. Y., before the war.

"We have just recently received inquiries from the United States for lumber," he added.

"We are interested in trading with the world, but it is nonsense to say we want to disturb the pulp markets," he insisted. "Why can't we do business with all countries?"

He added that Russia now is trading with 55 countries in wood products and has many sales agents in Britain, particularly.

A predecessor of Mr. Nichkov in his position as president of Exportles, incidentally, is the present Soviet Ambassador to the United States, Mikhail Menshikov. Export-les, incidentally, is a combination of two words—"export" and "les," meaning wood products.

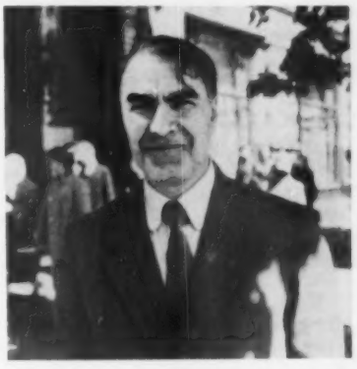
Interview In Moscow

Jakovlev Nichkov

V. JAKOVLEV, timber economist for Exportles, on the left, was present throughout the editor's interview with VLAS NICHKOV (right), internationally well known president of Exportles, who heads up all Russian exports of logs, sawn goods, plywood, pulp and other wood products.

When I was in Moscow, the news was published there that Russia's population is now 208,826,000, an increase of 18,100,000 over the pre-war population. There are 25 cities of over 500,000. Moscow's population is 5,032,000. Leningrad's is 2,880,000. The third city is Kiev, 1,102,000. With a per capita consumption of paper of only about 32 lbs., it will have to build a lot of mills and greatly increase domestic paper supply and uses to raise standards to a level of Western Europe.

My notebook on Russia is still going to provide some future reports, I plan to write later on other matters of interest to pulp and paper readers.



Our Editor for Russia

H. DJALILOV, who besides being senior engineer for pulp and paper in Russia's State Planning Commission, is editor in Russia for this magazine. He is one of three Russians who have especially written articles from Russia for our readers.

New Strength for B. C. Expansion

For the second time since World War II Western Canada blazes the expansion trail. Here, PULP & PAPER reports exclusively.

By C. L. SHAW
Canadian Editor

• A few years ago British Columbia was pacing the world in pulp and paper mill construction. New projects were underway at Prince Rupert, Port Alberni, Duncan Bay, Harmac and Crofton. And again today—for the second time in a handful of years—a wave of expansion is sweeping the province.

Mills are being built at the mouth of the Fraser River and at Castlegar on the Columbia. They represent a total investment of close to $60,000,000.

Powell River Co. Ltd. is building two mills—one for fine paper (the first of its type in western Canada) and the other for flakeboard production. Estimated cost of the paper mill is $8,000,000; the flakeboard plant, $2,000,000.

The Castlegar operation is the project of Celgar Ltd. and at full capacity will produce 500 daily tons of bleached sulfate pulp. The mill will be part of an integrated wood utilization center, the first to be located away from tidewater. (Castlegar is fully 500 miles inland.)

Celgar, with headquarters at Vancouver, is a subsidiary of Canadian Chemical & Cellulose Ltd., an affiliate of Celanese Corp. of America. A companion operation is Columbia Cellulose Co. Ltd., also based in Vancouver, with a 375-ton bleached sulfite and high alpha mill at Watson Island near Prince Rupert.

Powell River, which operates the world's biggest single newsprint mill (nine machines), has been a major producer of newsprint since the first decade of this century. The entry into fine paper and flakeboard marks a significant departure.

From both Powell River and Celgar PULP & PAPER has obtained previously unpublished details concerning the new projects.

Modern Mill at Castlegar

The Celgar mill will be of advanced design and in several features will incorporate facilities new to the industry. H. A. Simons Ltd., which has carried out the engineering for many of the other big new mills in western Canada as well as elsewhere, has been working on plans for Celgar.

There will be two Kamyr continuous digesters (Sandy Hill Iron & Brass Works) at Castlegar and an airborne Flakt dryer (American SF Products Inc.).

Not only will the Columbia River supply unlimited quantities of pure water (a daily 40,000,000 gal. will be needed), but it will provide an economical means of transporting logs throughout the 200-mile length of Celgar's tree farm license, one of the first to be issued by the provincial government.

Logs, which will be handled in 50-ft. lengths in bundles, will be towed down the Arrow Lakes, which form part of the Columbia system. A gantry-type crane will lift the bundles from the water to trucks or trains for transport into the woodroom. Through the installation of ring-type barkers and horizontal chippers, Celgar will be able to use full-length logs with a resultant saving in equipment and manpower.

An interesting design feature is the positioning of the central administration offices in the mill proper. Departing from the concept of separate buildings, Celgar's managers and supervisors will have direct access to operating floors. Shops and stores will also be located in this central position.

Noteworthy is the selection of 317 ELC stainless vats for the five bleach washers. This choice permits flexibility in water re-use and avoids potential problems that might arise in the use of tile and concrete vats for these large units. Rotary and closed screens have been selected for the knotter screens, and recently-developed pressure type screening will be installed for the bleach stock.

Gardner: First Time in Canada

Production at Powell River's fine paper mill will include bond, ledger, writing, book and offset grades. It is expected that the mill will be in operation by about May 1960.

The machine room (400 ft. by 50 ft.) will be of reinforced concrete; the finishing room will be a one-story building measuring 250 ft. by 50 ft. An extensive use of Glulam beams will be a construction feature.

Stock preparation will consist of E. D. Jones Corp. Hydra-Cycling refiner bleach pulping equipment purchased through Alexander Fleck Ltd., Ottawa, Ont.

A Dominion Engineering Co. Ltd. 120-in. machine and a Valley Iron Works headbox are being installed. The machine will have a top speed of about 1200 fpm. Featured will be the use of Gardner dryers (Rice Barton Corp.) for the first time in Canada and the installation of blower vacuum pumps manufactured in Switzerland by Sulzer Bros. Ltd. The press section will consist of standard and reversing suction presses, a smoothing press and a horizontal sizing press.

German Equipment Featured

Finishing room equipment will include a supercalender built in Germany by Maschinenfabrik Joseph Eck & Sohn and—also from Germany—a Jagenberg-Werke AG sheet cutter. The sheet trimmer is supplied by Harris-Seybold Co.

Fairly high illumination levels will be maintained throughout, with 40 to 50 foot-candles in the machine room and stock preparation areas and up to 100 foot-candles in the finishing room. A Babcock & Wilcox Co. boiler equipment is on order.

Engineering for this project is being carried out by Sandwell & Co. Ltd. of Vancouver, whose operations are worldwide. E. N. Walton is project mgr. for Powell River.

Powell River's flakeboard plant is scheduled to start production late this year. It is located on the eastern tip of Lulu Is. adjacent to Powell River Lumber Co.'s sawmills and within a couple of miles of Annacis Is., where the fine paper mill is being built. Annacis Is. is an industrial area created by Grosvenor Estates, a British-financed company. It has attracted numerous factories during the past two years, including a copper mill.

Cedar for Flakeboard

Red cedar waste from sawmills will be used as the raw material for flakeboard, which will be manufactured in sheets measuring approximately 4 ft. by 8 ft. and ranging in thickness from ¼ to ¾ in. The plant is designed for an ultimate capacity of approxi-

mately 110 tons daily.

Industrial Engineering Co. of Tacoma, Wash., which has had considerable experience in this field, has its design well advanced, and most of the major items of equipment are on order. The contract has been awarded to Narod Construction Ltd. for the mill buildings, and works on this phase started early in June.

Major units of equipment are a rotary gas-fired dryer supplied by Standard Steel Corp., Los Angeles; a Foster Wheeler Corp. boiler; a Yates-American eight-drum sander, and a Kohler-Joa rip and trim saw for sizing the finished boards.

The 20-opening press is being supplied by Williams White & Co. of Moline, Ill.; and the press loading and unloading equipment by American Mfg. Co., Tacoma.

Most of the remaining equipment consists of specially-made machinery that is being ordered from various manufacturers and fabricators in the lower mainland of British Columbia.

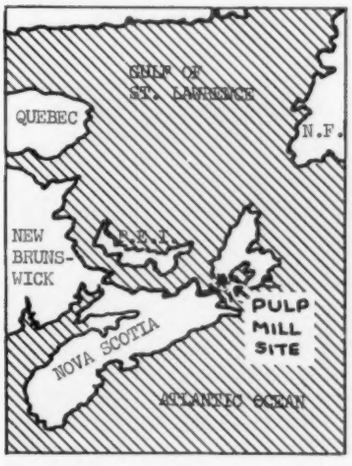
Nova Scotia Construction Starts

High grade bleached kraft mill, using Stora Kopparberg processes, will have 300 tons per day capacity

● Canada's Atlantic coast will definitely get another pulp mill—the $40,000,000 bleached sulfate project of Nova Scotia Pulp Ltd. on the Cape Breton side of the Strait of Canso. Construction is to start immediately.

President Karl A. Clauson has announced the appointment of Walter W. Holland as vice pres. and gen. mgr. Mr. Holland recently resigned as vice pres. of British Columbia Forest Products Ltd. He has a broad background in pulp and paper, having been actively engaged in research, construction, operation and management. He was directly responsible for the Crofton mill project of BCFP during engineering, construction and early operating stages. The Crofton bleached sulfate mill is the newest in western Canada.

During his busy career Mr. Holland has been associated with the Pulp & Paper Institute of Canada and with Quebec North Shore Paper Co. at Baie Comeau, Que., where he was gen. supt. Prior to joining BCFP in 1955, he was mill mgr. for Oxford Paper Co. at Rumford, Maine, and in 1951 served as chairman of the Technical Section of the Canadian Pulp & Paper Assn.



PROPOSED PULP MILL will be built at site indicated, on southern tip of Cape Breton Island.

Expansion in Mind

Already underway is the clearing of a 323-acre site near Point Tupper, N. S. The nearest large town is Port Hawkesbury. Nova Scotia Pulp discarded the original consideration of a 100-acre site on the opposite side of the strait because it offered no opportunity for expansion.

The new mill has the backing of Stora Kopparberg Corp., New York, N. Y., of which Mr. Clauson is also president. It is the North American subsidiary of the big Swedish industrial concern of the same name.

Nova Scotia Pulp will not be competitive with the nearby mill of Bowaters Mersey Paper Co. in Liverpool, a newsprint producer. Minas Basin Pulp & Paper Co. Ltd. at Hantsport manufactures building papers. Halifax Power & Pulp Co. Ltd. at Sheet Harbor and LaHave Pulp Co. Ltd. at New Germany are groundwood operations.

According to the program announced by the new firm, $10,000,000 will be spent annually on wages and purchases alone during the first 30 years of its 50-year contract with the provincial government. The mill is expected to be in production within two years and when in full operation will employ about 1,200.

Daily capacity will be 300 tons of high-grade bleached sulfate pulp. Annual wood requirements will be 250,000 cords, of which 150,000 cords will be cut by the company off its licensed lands. Some 100,000 cords will be purchased from private lumber operators and woodlot owners. Annual consumption of hardwoods will be at least 25,000 cords.

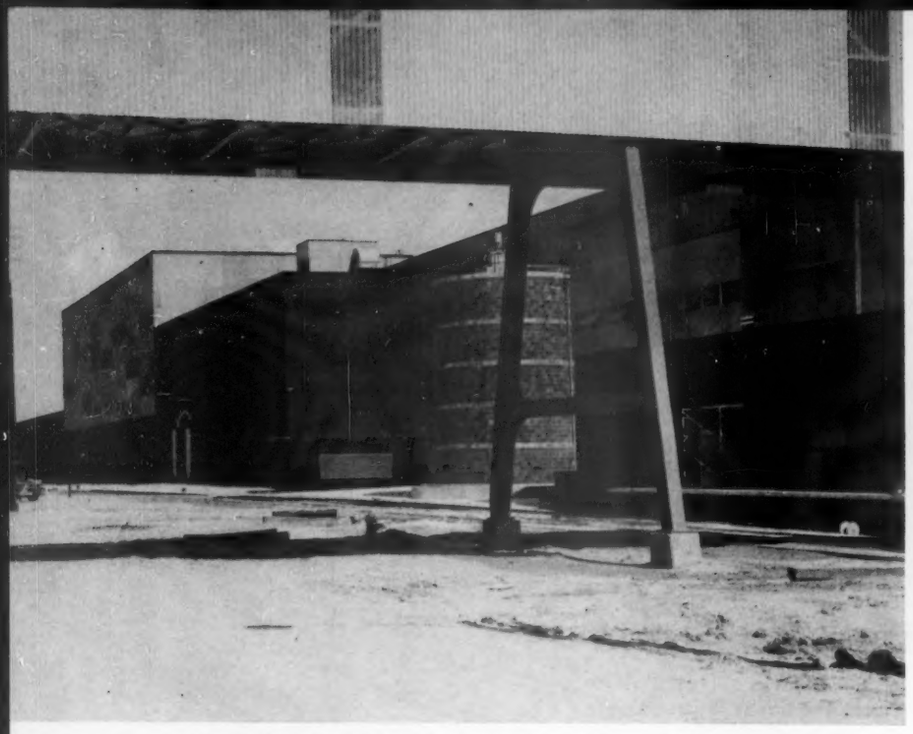
WALTER W. HOLLAND, recently appointed vice pres. and gen. mgr. of Nova Scotia Pulp Ltd., now building a $40,000,000 mill on the Strait of Canso.

45-Year Plan

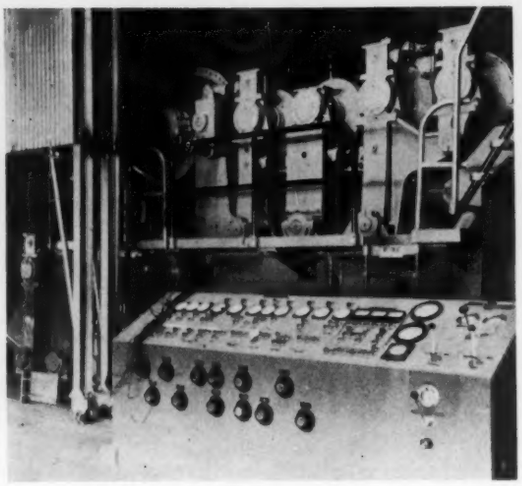
Within five years Nova Scotia Pulp will submit to the provincial government a 45-year plan of forest management following the principle of sustained yield. According to the terms of the agreement, the company will pay a sliding rate for wood ranging from $1.00 for softwood before the mill is in operation to a mutually-agreed price in the latter stages of the contract.

The mill will be supplied with a daily 24,000,000 gal. of water from the opposite side of the strait.

During the life of the 50-year agreement, Nova Scotia Pulp will have technical advice from Stora Kopparberg and will be licensed to use any of the Swedish firm's pulping and chemical recovery processes.



NEW $31 MILLION MILL will make double machine-coated papers.



ROLL COATER is part of process.

The ST. FRANCISVILLE STORY . . . and how they are

Double Clay Coating on the Machine

PULP & PAPER's exclusive first report on new mill tells in text and pictures about:

1. Roll and blade coating machine
2. Automatic starch cooking plant
3. Highly automated clay furnish plant
4. Two of largest supercalenders
5. How new mill affects small town
6. Front to back use of stainless
7. Basis weight and moisture controls
8. Why Crown Z came South

By WILLIAM F. DIEHL Jr.
PULP & PAPER Southern editor

● Here, less than a mile from the historic "ole Miss," two giants have merged their finances and talents to build a revolutionary paper mill.

Crown Zellerbach, second largest producer of pulp and paper in the world, and Time Inc., which has a bit of a name in the publication field, are the co-owners of the St. Francisville Paper Co., now producing a double-coated sheet *on its machine*. Combined in this continuous operation are conventional roll coating plus the leveling action of the relatively new trailing blade coater.

Result: A printing paper with extraordinarily level-smooth surface, a premium paper, says St. Francisville, which it will produce at less than a premium price. With a wire width of 264 inches, the machine producing this paper is the longest, widest, fastest paper machine of its kind currently operating anywhere in the world.

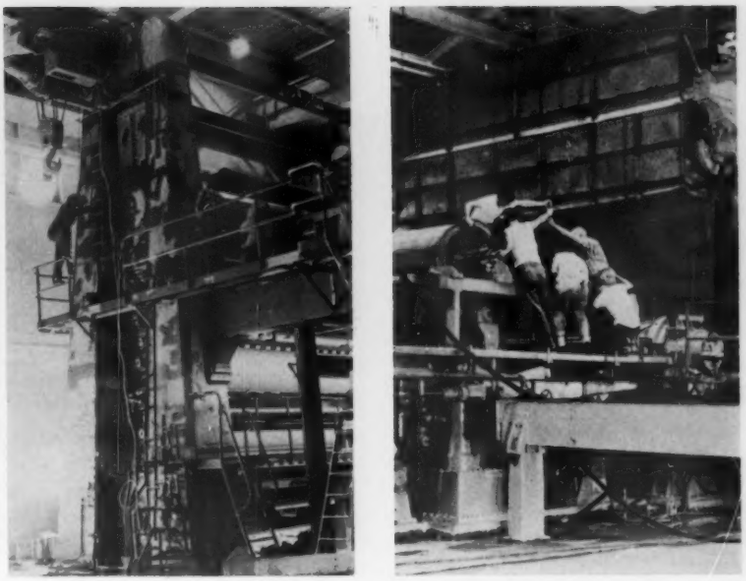
Development of this coating process can be traced back 11 years to the first cooperative venture of Crown and Time Inc. It was at this time that Time approached Crown with the idea of producing the magazine paper for its west coast editions of *Time* and *Life*. Crown entered the printing paper field, came up with a sheet that satisfied even Time's rigid expectations and became a major force in the printing paper field.

The new coating approach is the result of research carried out at Crown's Central Research Department at Camas, Wash., as well as practical

runs in the company's mills. Experimental coating runs, for instance, were made on No. 6 machine at the West Linn, Ore., mill, sent to Camas where the trailing blade topcoat was added, then back to West Linn where the sheet was supercalendered. In this way the process has been checked and double checked, over and over again. It is not surprising that Crown should come up with a revolutionary idea in coating. Here is a company started by Anthony Zellerbach in 1870 as a small stationary business in a San Francisco basement. The San Francisco earthquake fire leveled 17 of its 18 offices (it had grown that big by 1906) and that one office grew into the Zellerbach Corp. which merged in 1928 with Crown Willamette Paper Co., then one of the largest paper companies in the country (resulting in the name, Crown Zellerbach).

In 1955, Crown, firmly established as a Western paper company, levelled its sights on the South (where the industry had expanded a phenomenal 850% in 25 years), merged with Gaylord Container Corp. of St. Louis, and thereby acquired its big pulp and paper mill in Bogalusa, La., plus extensive forest holdings (it now has more than half a million acres in the South).

Today, Crown's 15 paper mills and 36 converting plants with 61 paper machines, produce everything from wrapping papers (its largest percentage product) to magazine and tissue papers. Of the total, 9% is printing paper, going mainly to *Time*, *Life*, *Newsweek*, *Sunset Magazine* and many others, including several foreign editions of the *Readers Digest*. Crown now has plans for a new pulp mill at DeRidder, La., less than 100 miles from St. Francisville, which the proposed DeRidder mill may eventually supply with pulp.

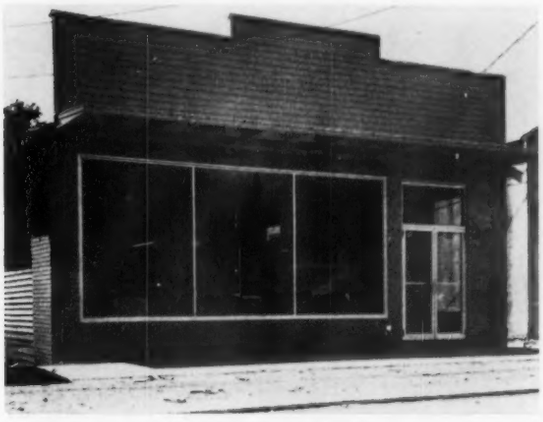


STRAINING AGAINST MASSIVE MACHINERY, construction workers and installation engineers struggle to put final touches on mill. At left, three men are dwarfed by supercalenders, largest ever made by Appleton Machine Co. Right, one of the Fourdrinier rolls for 264-in. Beloit machine.

Supermarts, subdivisions and sociability

One of Crown's top staffmen likes to tell about the time soon after he arrived at St. Francisville that he called a clergyman to find the time of Sunday services. The operator, commenting that there was a town meeting in progress, called the City Hall instead and when she couldn't get the minister to the phone spouted: "Well alright, just give me a Presbyterian."

That's St. Francisville . . . small, old-fashioned (and proud of it) with as many traditions as an ivy-covered college. Named for the Franciscan monks who used its high ground as a burial ground, St. Francisville has known better days. Once a high cotton town, it boasted the first standard gauge railroad in the nation and was neighbor to Bayou Sara, an important



NEW FACE ON DRUG STORE is one of the signs of prosperity which mill brought to St. Francisville.

NEW SUPERMARKET, put up by IGA, is another indication of the town's changed economy.

ST. FRANCISVILLE

cotton port on the Mississippi in a class with Natchez. The boll weevil and a flood made Bayou Sara past tense. St. Francisville became a quiet agricultural town whose main industry was a seasonal sweet potato cannery, which operated about three to five months a year. Most of its young people work in places like Baton Rouge, 28 miles away, or just move.

Mill Changes Town

With a $31 million mill in its backyard, St. Francisville has become a changed town. A subdivision considered one of the finest in Louisiana has been completed. Two others are in the making. There is talk of a new lounge, a new restaurant, shopping centers, a new motel. A five-member planning and zoning commission has been set up and nearly all the streets have been blacktopped or paved. The town has more sidewalks, new street signs, a new speed limit. A zoning commission has been formed to study long range civic improvements to keep pace with the changing pattern.

And it has a gleaming new supermarket—considered a financial risk before now.

The population has already grown from 1,611 two years ago to more than 1,800 now. Predictions are that it will be over the 2,000 mark before too long.

$1,000,000 Payroll

Jim Robinson, editor of the St. Francisville *Democrat* and son of the late Elrie Robinson, whose collection of antique type faces is now part of the New York Public Library collection, is a good spokesman for the town: "In some ways this is the strangest place in the country. The folks here are real individualists. At first they didn't take too kindly to the new mill. And of course they are slow to make friends.

"But that's all changing, all of St. Francisville is changing. Just last week the town threw a social for the mill people, brought a band in all the way from New Orleans. There were 750 people there! I'll tell you, we were just a kind of stick-in-the-mud town, rolling on year after year, why a man had to live here 50 years to be a native. It's getting cosmopolitan around here now. And the town likes it!"

Youthful mayor Clifford Wilcox also sees a grand transition in the making: "At first we were cautious—why not? They say this mill will eventually bring in 750 new people—that's half what our whole population was. But they're fine folks. They're taking a big part in civic affairs and churches. Just recently the city government turned around and bought the water system—floated a $190,000 bond issue to do it. Till now it was privately owned. The mill is nothing but good, man. It's put us on the map!"

The million dollar payroll will also mean much to the town's merchants. Some, like druggist Joe Mulhall, have already modernized their stores. Others have already felt the increase in living standards. Tony and Frank Vinci's new supermarket, for instance, means 90 inches a week in advertising to Jim Robinson; and a local oil dealer recently delivered 3,000 gallons of oil to the mill for the lubrication system; this he says, is the largest single order he ever sold.

And if the townsmen had any fears for their independence, they need no longer worry. Recently a $300,000 bond issue was floated to double the size of the elementary and high school. Crown Zellerbach Foundation matched it with $250,000. The first proposition was turned down by the people—they didn't like the architecture of the school. But 60 days later they approved it overwhelmingly. St. Francisville just wanted to show its independence. It did—and it can offer its youth security and a future now.

"BACK ON THE MAP" says Mayor Cliff Wilcox proudly. Paper mill means new stature for town.

SON OF "HORSE AND BUGGY" printer Elrie Robinson, 31-year-old Jim sees bright future for area.

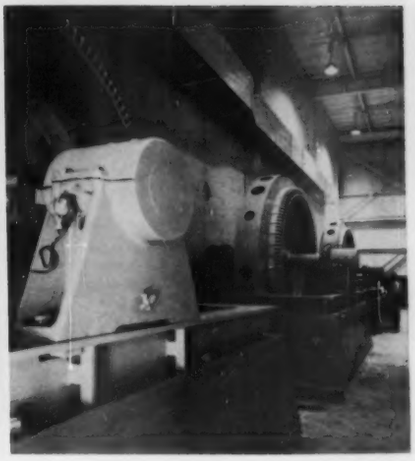
Highly automated groundwood, bleaching

The paper mill is almost a direct line flow, from woodyard through to finishing room. From the woodyard conveyor, logs are carried on a James Brinkley designed chain conveyor and dropped at 90 degrees to a second chain conveyor which carries them past the grinders. A sorter at the junction of the two conveyors pulls off reject wood.

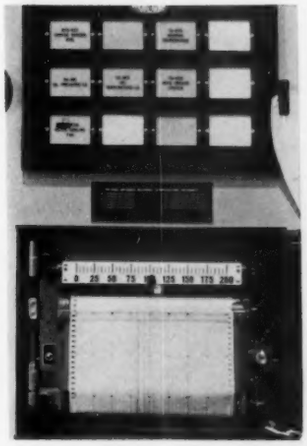
From the Roberts grinders, stock flows to a 10 ft. by 5 ft. Pascal combination knotter and coarse screen, rated at 100 tons a day. All parts of this unit coming in contact with pulp are 316 ELC stainless lined. The system from the screens through to the grinder chest, tile-lined by Stebbins, is sealed with an automatic purge to remove shives from the bottom. The flume running from grinders to bull screens is also Stebbins tile-lined.

A special series of automatic alarms designed and installed by Panellit Service Corp. protects the drives on the grinders from burning out. The alarms are connected to a scanner which is tied in to the front and rear bearings of the grinders and the front and rear bearings of the motors. If the temperature of these bearings passes a preset tolerance an alarm system warns the operator.

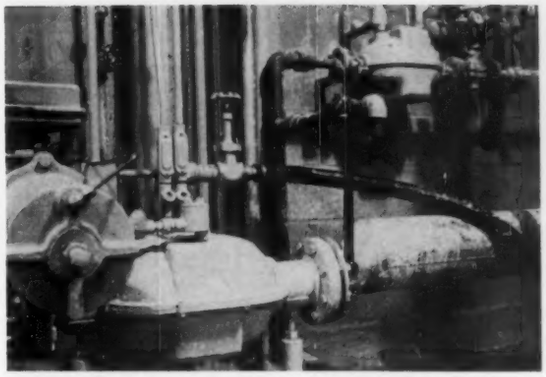
The one-stage bleach system is also automatic. Correct bleaching mixture is preset and Foxboro automatic flowmeters monitor flow of both stock and bleach liquor into the tower. As the flow of groundwood stock increases or decreases, the liquor feed into the tower also changes proportionately to the flow.



PUSHING BUTTON, OPERATOR IN GROUNDWOOD ROOM actuates rolls which drive log into one of three Appleton Machine Co. Roberts grinders. The 63-in. grinders can take up to 20-in.-dia. sticks. The grinders have 304 stainless steel flow boxes and shower pipes. They are driven by three 3,000-hp General Electric synchronous motors, shown at right.



ALARM SYSTEM for front and rear grinder bearings is tied to scanner which sounds alarm when temperature tolerance passes pre-set limit.

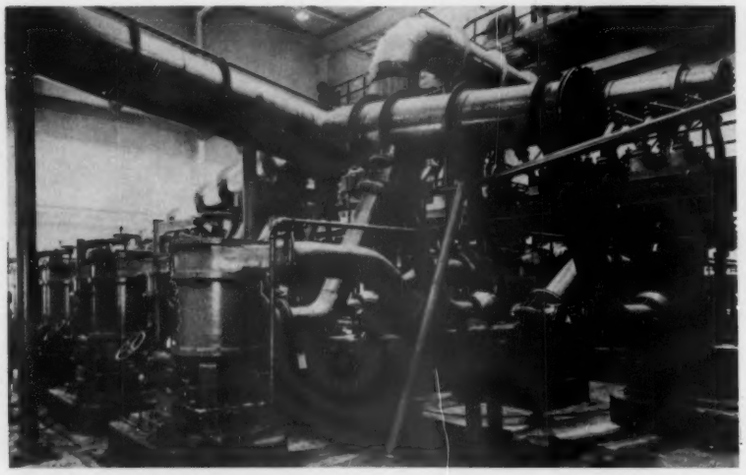


CONTROLLING BLEACH mixture are two Foxboro flowmeters. One in foreground regulates groundwood flow; other controls bleach liquor so ratio is always correct.

SINGLE-STAGE SODIUM HYDROSULFITE bleaching is carried out in 75-ft. Sandy Hill Kamyr bleach tower. The 15-ft. dia. tower, rising above adjacent storage tanks, is 304 stainless with Permalite tile lining and handles 106 a.d. tons/day at 4.4% consistency for a 4 hour retention period.

ST. FRANCISVILLE

Stock prep: a study in stainless steel

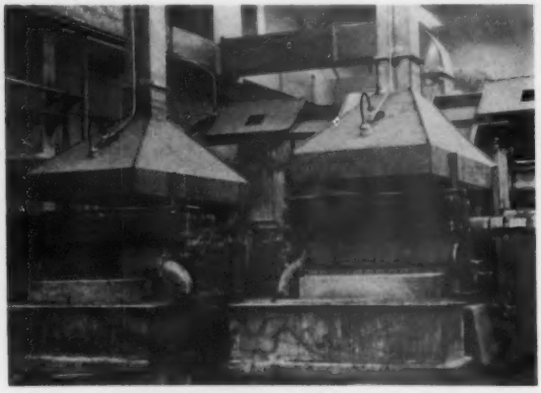


NETWORK OF STAINLESS STEEL piping intertwines as it goes from Centri-Cleaners to Selectifier screens and on to paper machine.

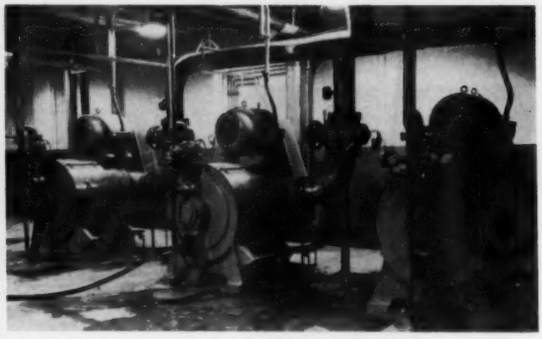
Corrosion is prevented and cleanliness assured at St. Francisville by about 400,000 pounds of stainless steel, most of which was fabricated by Northwest Copper Works. Much of it is apparent in the elaborate stock preparation system.

Before going to stock preparation, groundwood is stored in a 40 b.d. ton Stebbins tile-lined chest. Bleached chemical and broke pulps are stored in 50 ton chests, all of which are equipped with Brinkley agitators and are coated with Permalite.

Stock is screened at .7 to .8 a.d. consistency through a primary Mark E Cowan screen with .045 perforations. Secondary screening is through a Mark Junior with .035 holes at a temperature of 120 to 130° F. The screens have rubber-lined hollow shafts and

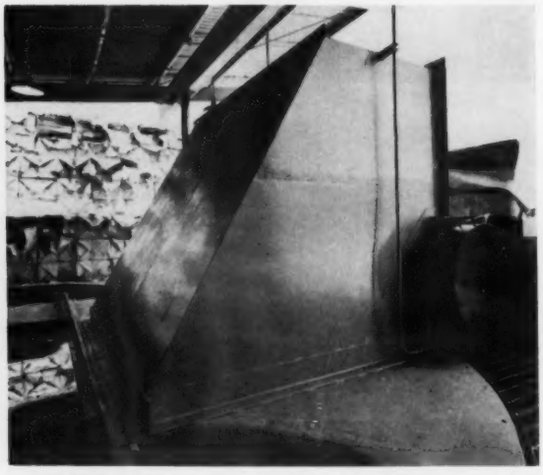


GROUNDWOOD IS SCREENED through Bird vibratory screens. All pulp gets further screening through Cowan Mark E screens.



SECONDARY SCREENING is through Cowan Junior screens.

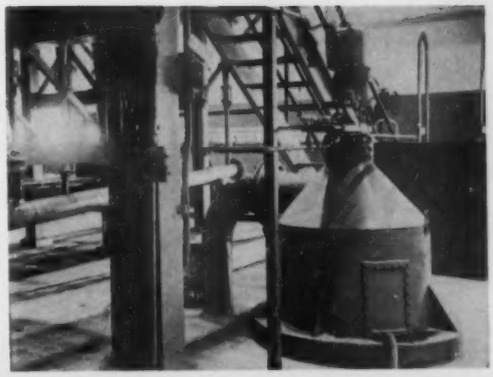
AHEAD OF BLEACH TOWER, groundwork stock goes over one of these 9½-by-16 ft. 304 stainless steel Impco thickeners. They handle 107 a.d. tons of groundwood a day at .5% consistency. Removable J. O. Ross hoods are also of 304 stainless.



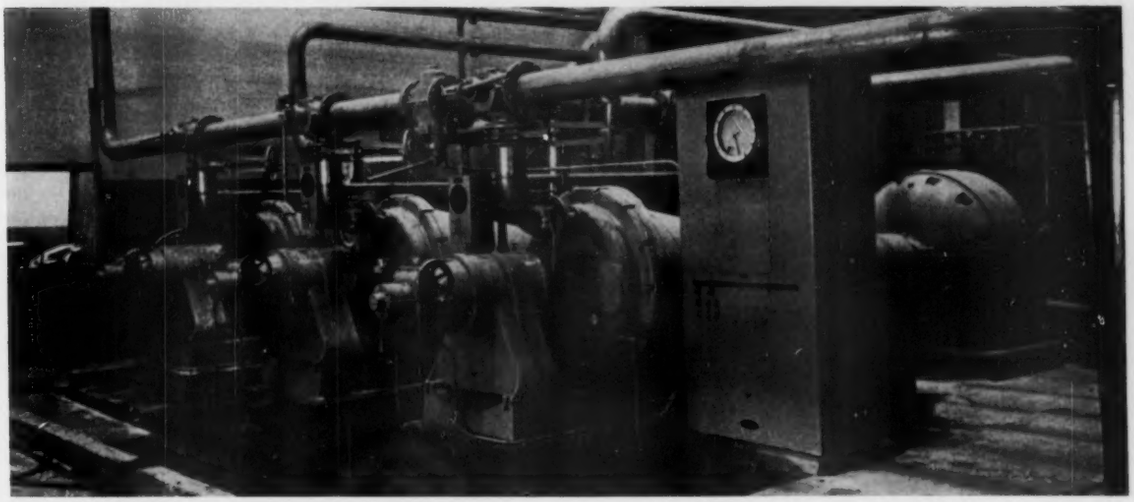
LOCATED IN THE OPEN SHED, Black-Clawson Hydrapulper with steel Brinkley conveyor is used to repulp chemical pulp from other Crown Zellerbach plants. Pulp is stored outside.

Monel screen plates. Spare screen is a Mark E.

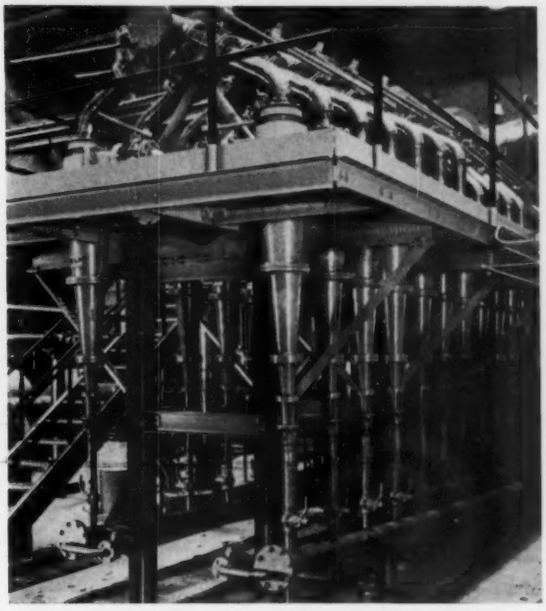
Purchased pulp is repulped in a 304 stainless Hydrapulper which will handle bales up to 32 in. or 90% a.d. sheets in its 18 ft. shell. Bleached pulp and broke are refined in Jones Majestic jordans and are blended in a Morden Slushmaker before passing through the Jones machine stock jordan. Machine-prepared stock is then washed and screened through Selectifier screens with 316 ELC stainless interiors, .079 in. cylinder holes.

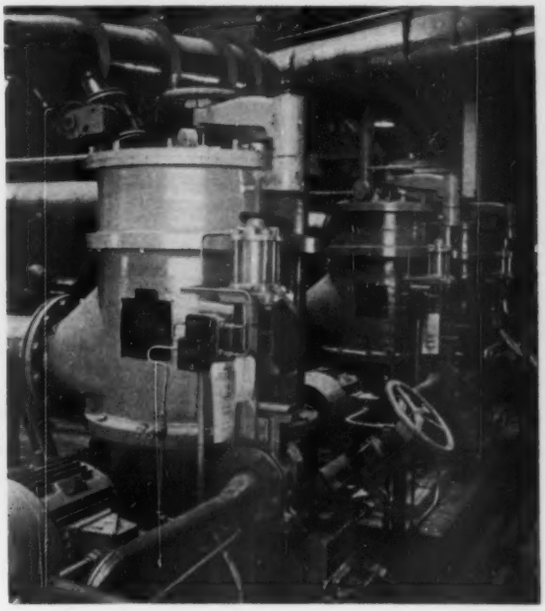


ON OPERATING FLOOR, six 304 s.s. DeZurik consistency regulators control flow of pulp through stock prep system.

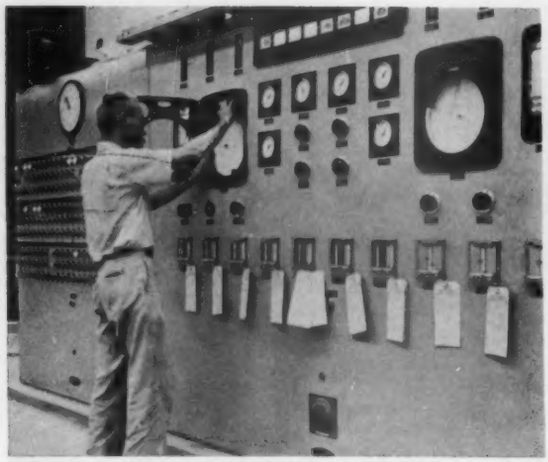


JONES MAJESTIC JORDANS are used for refining. They are driven by 400 hp motors, and have ¼-in. stainless steel fillings, SKF couplings, Accru-Set controls.

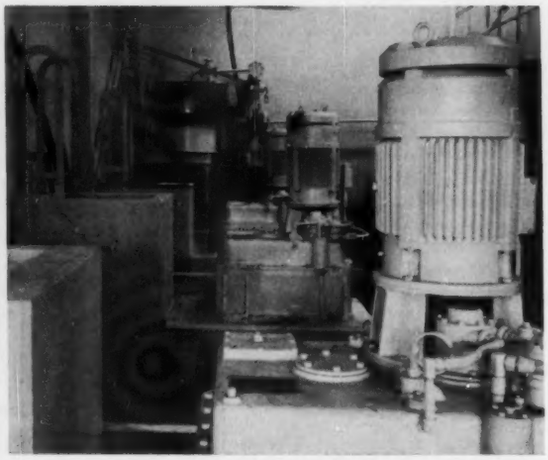




THESE 36 PRIMARY AND SECONDARY Bauer 623-B CentriCleaners (left) insure clean paper. Secondary accepts are returned to the primaries. Five Black-Clawson 24-P Selectifier screens (right) handle 17,400 gpm to machine headbox.



NERVE CENTER OF COATING PLANT is this intricate control panel which monitors the fully automatic system. A Henry Pratt starch cooker, modified by CZ and Panellit Services, also operate automatically on demand from machine.



PUMPED FROM STRUTHERS WELLS DISPENSER, clay goes to one of four Stebbins tanks, equipped with Allis-Chalmers dry pumps and Brinkley agitators. Each of these 75-ton chests is designed to produce a complete batch of clay coating.

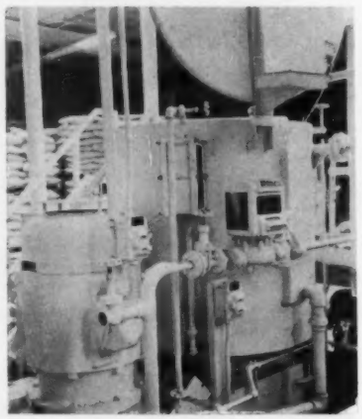
How coating furnish is prepared

The clay plant is housed in the main machine room building and is adjacent to the machine. Kaolin clay is dumped from hopper cars into a live bottom pit from which is conveyed by Stephens-Adamson conveyor into the clay dispenser where it is liquefied. After storage and screening, the clay slurry is pumped through Robbins & Myer Moyno pumps into clay storage.

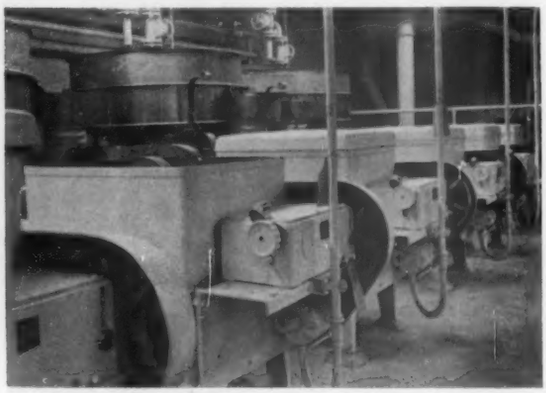
Titanium dioxide, clay, ammonium is screened across a 120 mesh Sweco screen at 20 gpm. Blade coating, screened before delivery to the machine, is screened over an 80 mesh screen at 50 to 60% solids and 15 gpm.

Titanium dioxide, clay, ammonium stearate and starch are all proportioned correctly in Omega Machine Works Rotodip feeders. There are two duplicate systems—one for roll coat furnish, the other for blade furnish. From the Rotodips, the furnish is pumped either to the blade or roll chest. Roll coat furnish is stored at 50% consistency in a 2000 gal. Stebbins chest with stainless steel James Brinkley agitators. The furnish is pumped directly to the roll coater on the machine through Moyno chemical pumps.

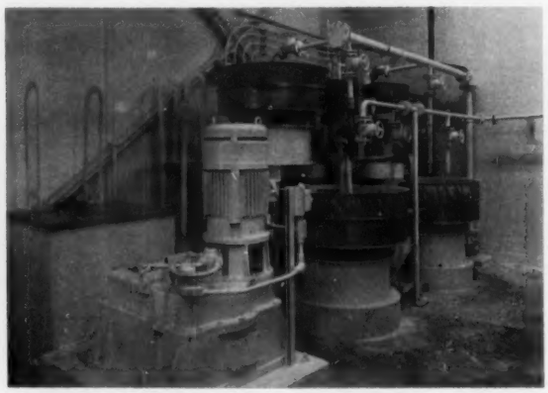
Blade coating mixture is screened before storage and is stored at the same consistency and capacity as the roll furnish.



TITANIUM MIX is made in a Kady mill handling 1200 lbs. of titanium dioxide and 515 lbs. of water in 3 daily batches.



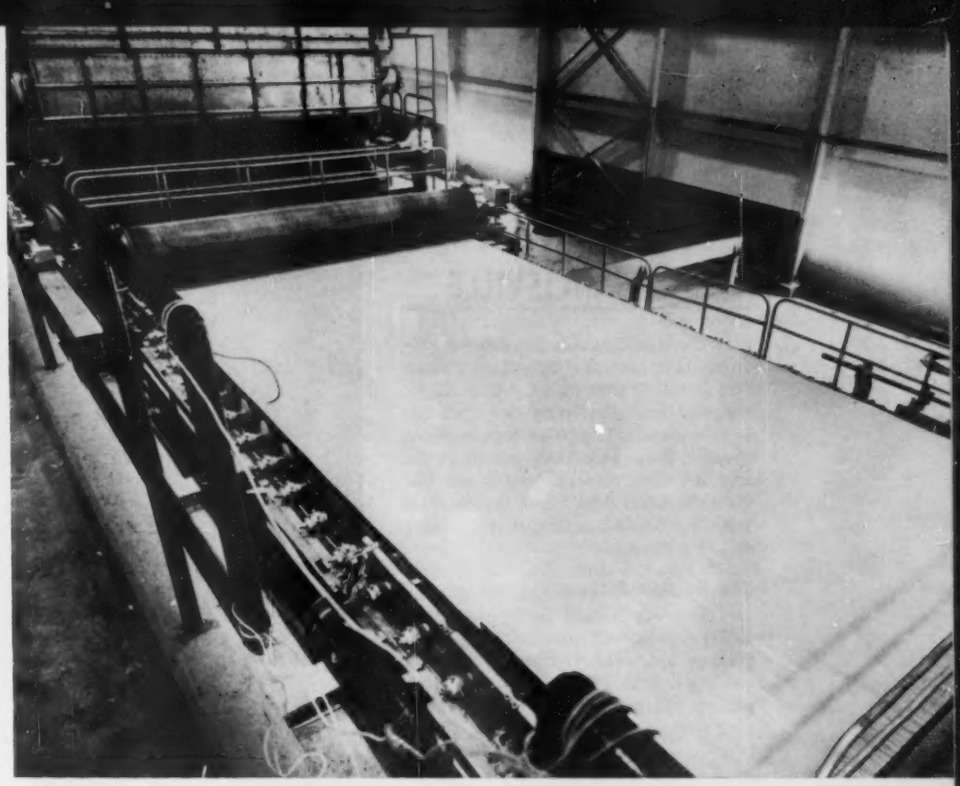
CORRECT PROPORTIONS OF CLAY, titanium dioxide and ammonium stearate are measured in these Omega Machine Co. Rotodip feeders. Duplicate systems produce roll and blade coat mixes.



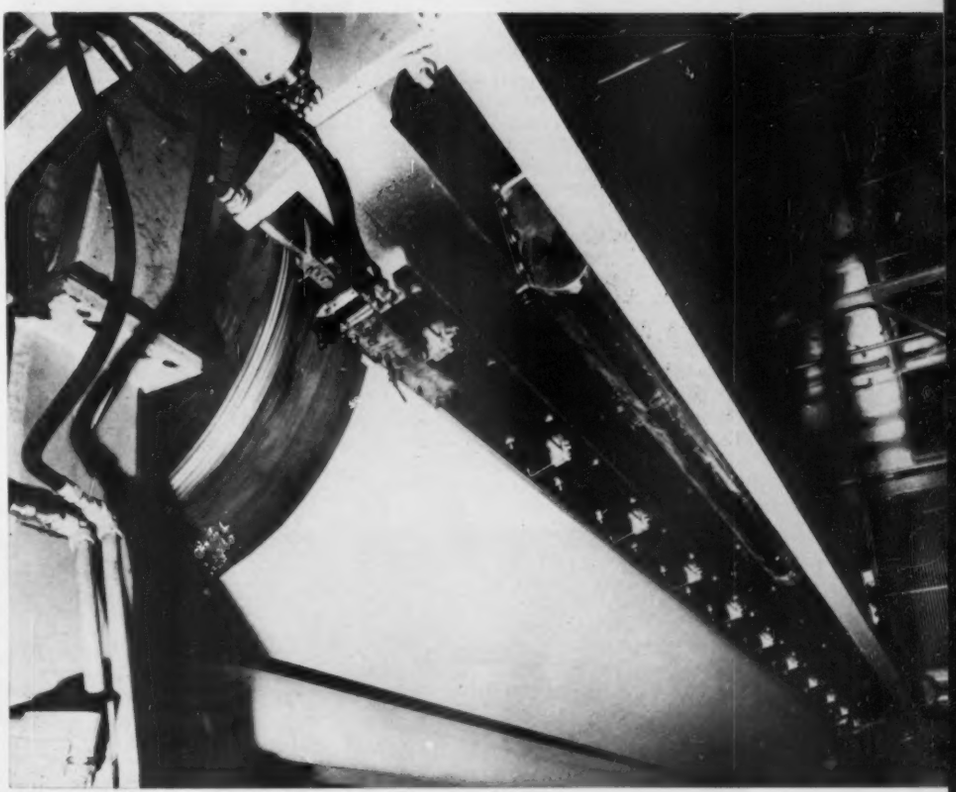
SCREENING HIGH CONSISTENCY CLAY, 48-in. Sweco screens with 120-mesh wire handle 30 gpm. of clay at 70%. Sweco also are used to screen titanium, blade furnish ahead of machine.

ST. FRANCISVILLE

Machine includes double coating, other features



INDUSTRY'S MOST REVOLUTIONARY NEW MACHINE is this 246-in.-trim Beloit Fourdrinier. It has suction pickup, roll coater and two trailing blade coaters to provide on-machine double coating at 1,650 fpm.



ONE OF TWO TRAILING BLADE COATERS by Rice Barton. The sheet goes into dryer from Mt. Hope expander roll. On second blade coater, the sheet is reversed to coat opposite side. Bank of dryers separates roll coater and each blade coater.

Stock to the Beloit machine is controlled at 3% consistency through six 304 stainless consistency regulators with 316 ELC butts and paddles. The system is designed to handle 60 to 120 tons a day of groundwood and chemical pulp, 50 to 100 tons a day of broke.

A 25,000 gpm Goulds fan pump moves stock into the air cushioned headbox. All surfaces contacting stock are low carbon stainless. The vertical type slice has a bottom lip made of replaceable Teflon. Stock distributor is a multiple inlet pipe with 316 ELC stainless header. The headbox and slice have five 16-in. dia. 316 ELC perforated rectifier rolls with eccentric type mountings for adjusting.

The 138 ft. long removable Fourdrinier is equipped with Beloit multiple shakes and the edge fittings are corrosion proof. The 38 in. dia., 268 in. breast roll is centrifically cast bronze and carried on swing arms provided with air motor operating lowering arrangements.

The machine has 18 table rolls and one hook roll, all 15 in. dia. and constructed of aluminum tubing covered with ½ in. thick hard rubber, 10 to 15 density. Five of these rolls are grooved circumferentially and the balance are designed to be grooved later, and all are mounted on anti-friction bearings with rubber cushion mountings. The forming boards are all stainless steel with Micarta lips where they contact the wire.

There are seven stainless steel 12 in. suction boxes with end grain maple covers and motor driven oscillators. The first four boxes have individual controls while the remaining three are on the same control unit. The header is provided with automatic controls. The 36 in. Sinclair dandy roll has air operated lifts with cross shafts to raise and lower the roller in and out of wire contact.

Stainless steel saveall pans are mounted from the main Fourdrinier beam and do not have to be handled during a wire change. The pans under the wire and the trays extend from the breast rolls up to and including the last wire suction box. All wire rolls and press rolls are provided with Lodding oscillating doctors. The saveall pans are equipped with discharge spouts with elbows allowing horizontal discharge and are spaced wide enough apart to allow for possible expansion to a 266 in. wire.

Other parts of the machine have

also been designed to provide for future increases in size. The suction couch roll is 266 in. face and 42 in. dia. and is of the latest Beloit design with a double box. The high vacuum area of the suction box is 6 in. wide and the low vacuum area 5 in. The couch is centrifically cast bronze shell with air loaded sealing strips and a Beloit silencer.

The Suction Pickup

The press section incorporates the Beloit designed automatic suction pickup and sheet transfer and is equipped with a 32 in. bronze suction pickup roll with a 4 in. wide internal box with air loaded packing, 32 in. bronze suction wringer roll with 270 in. drilled face, plain wringer roll, 32 in. suction felt roll, 44 in. first and second suction presses combined with a 47 in. common press roll used as a Twinver press. The second suction press is the Beloit patented air bleed type and all are 270 in. drilled face and equipped with Beloit silencers.

The suction press section is provided with two showers for the pickup felt with Monel lifts for felt cleaning. In addition two Vickery felt conditioners are furnished for the second and third press felt.

Following the pickup there are three conventional dryer sections comprised of 41 60-in. dia. paper dryers. The first and last top rolls of each section are provided with oscillating Lodding doctor blades. A totally enclosed Ross hood with Ross Midwest Fulton dryer drainage controls heat and humidity. Following the dryer sections is a conventional 8 roll Beloit calender stack. The bottom roll is 40 in. dia. Farreloy and the remaining rolls are all 18 in. Farreloy chilled iron rolls mounted on

25,000 GPM machine fan pump was supplied by Goulds Pump, Inc.

anti-friction SKF bearings with the bottom roll bearing mounted directly on the base plate. Lodding doctors are carried on all the intermediate rolls and inside doctors are carried on the bearing arm. The outside doctors are carried on separate columns.

The On-Machine Coaters

From the calender, the sheet passes into the first of three on-machine coaters which are the outstanding attractions of the machine. The first is a roll coater with two 60 in. dia. rubber covered main coating rolls preceded and followed by four 30 in. dia. rubber-covered transfer rolls. Before entering the coater, the sheet passes over a Mt. Hope expander roll. The sheet receives a two-sided coating on this coater. A movable hood is attached which can be transferred back and forth over either the front or rear transfer roll section. The sheet is dried as it passes over the second transfer section and it then passes into a fourth dryer section comprised of 14 conventional dryers.

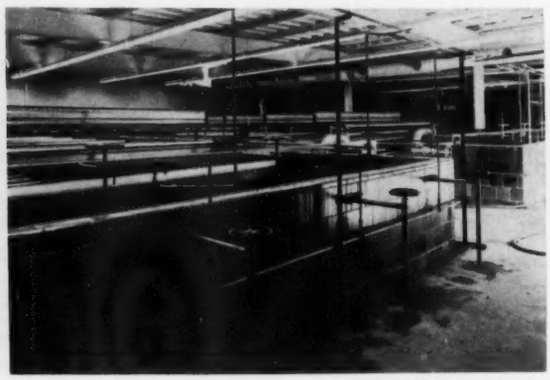
The first of two blade coatings is applied following the fourth dryer section. The sheet passes over a Mt. Hope expander roll, around a turn roll and into the Rice Barton Corp. trailing blade coater. The coating roll is 45 in. dia. and the coating heads consist of stainless steel jaws which hold the coating blade and stainless steel backing roll journals which move the blade in and away from the roll.

A thin doctor-type blade actually applies the coating material to the sheet as it passes over the roll. The bottom jaw is held with a cam-type clamp for quick release and blade change. The blade and its holder form the bottom of the clay furnish reservoir while dykes, which conform to the radius of the backing roll, prevent the clay from flowing out the ends.

The back piece of the reservoir contains removable dump troughs through which the coating can be emptied into a dump header when the coating head is lowered. The coating blades are .012 in. thick hardened steel. Coating color can be fed into the reservoir of each coater through a header that has a series of downspouts across the face of the machine. Each downspout has a quick cutoff valve and the main header has a quarter turn "on-off" valve.

A stainless steel saveall and shields are provided to prevent the coating mixture from falling or splashing on the sheet or parts of the dryer or felts. Crown has also provided an innovation in electric eyes located ahead of each coater separating the rolls at the first coater. They shut off the flow of coating to the distributor nozzles in the event of a paper break. Simultaneously the blades will retract at the second and third coaters, the coating shut off and cleaning showers and doctors are put into operation automatically to clean and keep clean the rolls until the sheet is running again. If the sheet is lost ahead of the sec-

VACUUM IS SUPPLIED to machine by these Roots-Connersville pumps. Air is supplied to headbox by a Nash compressor. Motors under 200 hp are Reliance, those more than 200 hp are General Electric. Walworth valves are used.



FIBER IS COLLECTED in two Sveen Pedersen savealls by flotation method. They are designed for 2,100 gpm white water, 50% clay and 50% fiber, at 4.5 pH have 316 ELC ss. collector tube, flight assemblies.

ond coater, this unique system energizes controls at the second and third coaters only.

Second Blade Coater

The second trailing blade coater is similar to the first. The sheet goes over a Mt. Hope expander roll, then over a turn roll which reverses the direction. This gives blade coating on both sides of the sheet. (The underside is actually coated first.) The two training blade coaters are separated by a fifth dryer section and five dryers follow the second blade coater.

After its third coating treatment, the sheet goes into a Beloit pneumatic reel with a constant speed drum 48 in. dia. mounted on anti friction bearings.

The machine's vacuum created by Roots-Connersvillle pumps, ranges from 10,000 cfm on the suction tube to 2700 cfm on the felt rolls. The first, second and third press sections have 6,900 cfm pumps. Seal water temperature is 88 degrees plus or minus 2, and the wire pit is 90 degrees plus or minus 2.

The machine is driven by a Beloit enclosed differential drive designed for maximum speed of 2000 fpm with a corresponding line shaft speed of 1000 rpm. It can handle 24 to 85 lb. printing paper at up to 2000 fpm. All helper drive motors are Reliance and are driven by two Reliance generators. An Eastwood-Nealley 32 in. suction box conditioner and a Farrel-Birmingham roll grinder are provided.

Two Morden Machine Co. continuous broke pulpers have been installed, equipped with Western Gear reducers, Fast couplings and G.E. drives. Before-coating pulper will handle 252 a.d. tons/day at 1980 fpm machine speed or 204 a.d. tons/day at 1600 fpm. The after-coating pulper will handle 304 a.d. tons/day at 1980 on 40 lb. coating; 246 tons a.d. at 1600 fpm on 40 lb. The 22 ft., 4 in. dia. pulpers can pulp continuously for 10 to 15 minutes, are 316 ELC stainless.

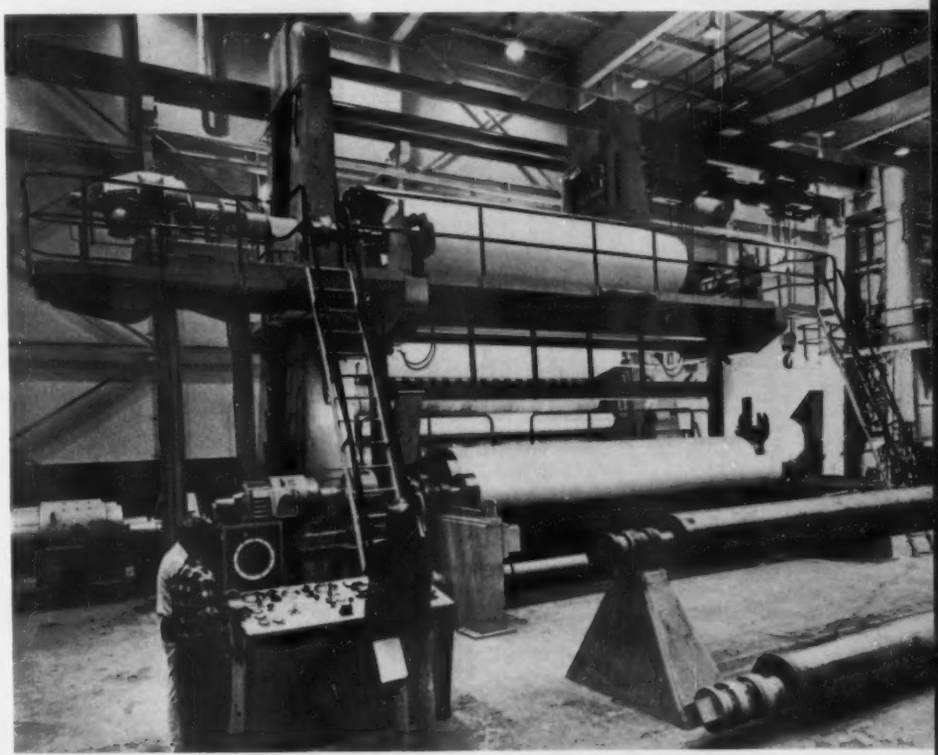
Calenders and rewinders

From the end of the machine, rolls are transported to either of the two gigantic supercalenders via a rail guided truck. One of the supercalenders is right hand driven, the other left. They are 10 roll double finishing supers in 8 roll stacks suitable for finishing 40 lb. coated book paper. The calenders are capable of 2500 fpm operation at 1600 lb. lineal inch pressure or 2000 fpm on 2000 lb. lineal inch bottom pressure. They will wind and unwind a 72 in. dia. roll on 20 in. spool with a threading speed of 50 ft. a minute. They are driven by high torque 350 hp Reliance motors with automatic cutoffs.

Directly in front of the supercalenders, two Cameron Imperial rewinders are located, complete with drum tables, designed for 5000 fpm. Rewinds have 250 in. face and are 21 in. dia. They are driven by 200 hp Reliance motors. A Cameron salvage rewinder is also provided to handle rolls up to 89 in. long and 60 in. dia. It will handle primarily a 40 lb. coated sheet or a 28 lb. uncoated base sheet. The winders are provided with pneumatic roll ejectors with constant tension and roll lowering tables.

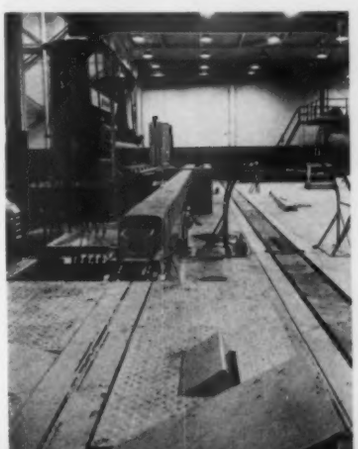
From the rewind stations, rolls are delivered to a wrapping station by a floor-flush belt conveyor. Storage space at one side will permit rolling rolls off and storing them between shifts. The entire roll handling system is designed to complete production directly from the winders on a three-shift operation and includes as much mechanical equipment as possible.

A conveyor elevator picks rolls



THE TWO LARGEST SUPERCALENDERS ever made by Appleton Machine Co. are located in a separate department. Their 10-roll stacks have 250-in. faces.

AUTOMATIC SHAFT PULLER is located between Imperial winders and serves either table.



LAMB-GRAYS HARBOR header and wrapper is semi-automatic; with Fairbanks-Morse weigher and turntable.

from the conveyor, lifts them to the roll wrapper and aligns them before discharging. The wrapper and roll header is semi-automatic and can accept rolls varying from 40 to 60 in. dia. and up to 104 in. length. An automatic cycle holds the rolls in the header for 1½ mins., then discharges them automatically.

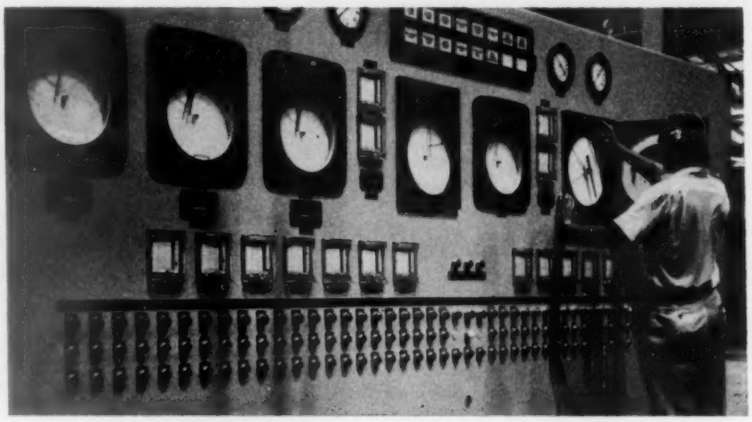
Rolls are weighed by Fairbanks-Morse scales and then redirected on a turntable into the Lamb-Grays lowerator operating at 30 fpm to the warehouse floor 18 ft. below. The lowerator has a 12,000 lbs. capacity.

A sheet finishing plant, owned exclusively by Crown Zellerbach, is nearby and includes an American Manufacturing air table and conveyor system, 100 in. Clark-Aiken cutter and Seybold trimmers. It is fully air conditioned and humidity controlled.

CLOSEUP SHOWS recorder with six air-operated control units below it.

Instrumentation is unique, versatile

Instrumentation has reached out toward new frontiers at St. Francisville. In addition to the normally accepted and more or less conventional instrumentation found in many mills today, some new things have been added. Panellit Service Corp. designed and installed most of the instruments, working closely with the Crown staff. They also developed the automatic starch cookers, as well as recommending other control and protective devices such as the grinder motor scanner, automatic bleach feed and preset refining instrumentation. Among other things, St. Francisville boasts automatic pH control. A control instrument in the thickener room maintains constant pH by regulating the variable speed pump delivering sulfuric acid to stock.

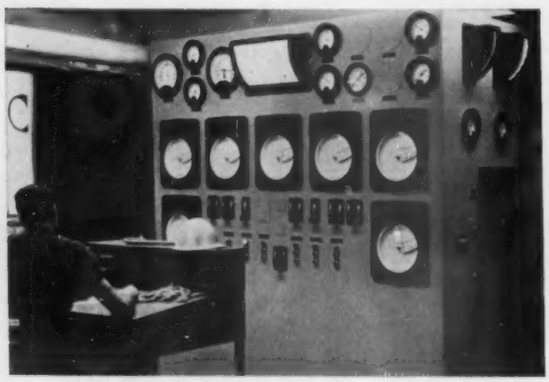


UNIQUE INSTRUMENTATION includes 6-point recorder in machine panel.

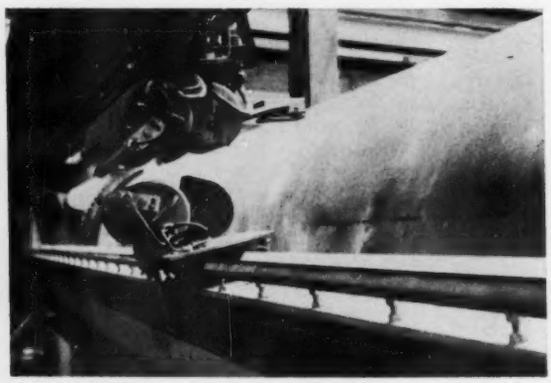
Perhaps the most interesting device used at the new mill is a pneumatic logging device which can be connected to six different points any place on the machine from the refiners through the dry end. It is used mainly to determine quickly and accurately the effect of one variable on the rest of the process. I.e., the operator could connect the jordans and several points along the wet end, in the pickup and at the calender. By monitoring the instrument closely, it would be easy to determine what effect a change in refining could have on the wet end or some other phase in the making of the sheet. By interchanging any of the 36 different combinations of points on its six logging switches, it is possible actually to record 1296 different combinations of readings on the logger.

Quality control is also increased by the use of three Curtiss-Wright beta ray gauges on the machine. One head is installed just ahead of the roll coater on the third dryer section, one after the roll coater and one ahead of the reel.

By continuously scanning the sheet, these instruments record information used to determine the basis weight of the sheet before coating, the amount



SEATED BEFORE BAILEY instrument panel, powerplant operator watches controls for 110,000 pph steam boiler.



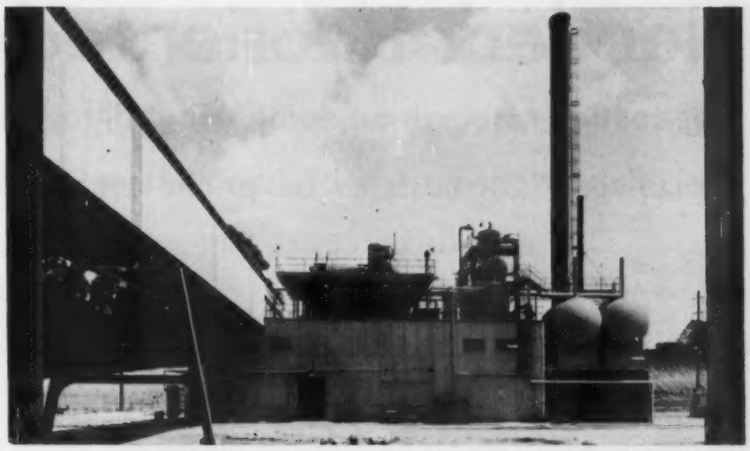
BETA RAY PROFILER located after the second blade coaters is one of three units on machine measuring basis weight.

of coating applied, the amount of blade coating and the final dry end basis weight. In this manner, the machine operator can tell by looking at the recorder whether the correct coating thickness is being applied and how the sheet is running generally. The heads are also connected to a magnetic flowmeter controlling the flow of stock into the fan pump so a change in the basis weight of the sheet will automatically correct the feed to the machine and change the basis weight of the sheet.

Provision has also been made to tie in the dryer sections to these gauges throughout the machine and automatically control the moisture on the sheet.

An automatic and continuous proportioning system is used to supply the machine with correct amounts of broke, kraft and groundwood and also to control automatically the amount of dye necessary to get the correct shade in the sheet.

In the Power plant, instrumentation and all pump, air and feed controls were supplied by the Bailey Meter Co. These include the necessary instrumenation to tie in the boiler and power departments to other parts of the mill.



SMALL, EFFICIENT POWER PLANT is adjacent to main paper mill, and contains, 110,000-hp Combustion Engineering boiler.

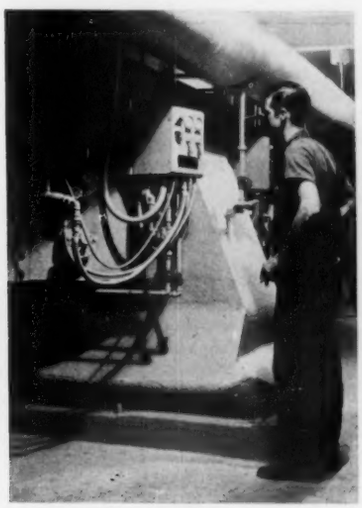
Westinghouse provided all the switchgear equipment, designed to protect the power distribution system against short circuits. In addition the 4160 volt motor control system is protected by Westinghouse Ampgards.

Power and water more than ample

Steam is generated through a 110,000 hp Combusition Engineering steam boiler at 600 psig and 750° F. The two boiler feed water pumps and two booster pumps are 320 gpm Byron Jackson pumps. The condensate booster pumps are also 320 gpm with General Electric drives. There are two 2-stage, 5-step duplex Ingersoll-Rand air compressors generating 1100 cfm at 110 psig.

Boiler feed water is made up in a Permutit Co. plant which includes a magnesium dioxide softener with chemical feed system, three filters, three Zeolite softeners, a recirculating pump, single wash pump and duplicate booster pumps. Shell and tube of the hot process unit is stainless steel with a one hour retention time. Boiler feed water de-aerating heater was supplied by Cochrane Corp.

Water is obtained through three deep well 3000 gpm stations, all of which are equipped with 2500 gpm deep well pumps. The water is drawn from three different strata, 1300 ft., 1500 ft. and 2000 ft., and is pumped to two 600,000 gal. water storage tanks plus an elevated tank for fire protection which was fabricated by Chicago Bridge & Iron Works.



OPERATOR CHECKS CONTROLS in the main boiler room.

Men Who Help Make St. Francisville Run

NUNN .... RILEY .... WALKER .... LOYST .... MAYBACH .... WENGER

Ed Nunn is res. mgr.; Robert Riley, asst. mgr.; Ray Walker, office mgr.; Dick Loyst, purchasing agent; Lee Maybach, plant engr.; James Wenger, pulp mill supt.

THOMPSON . MAYEUX . LYLE . PLANKINTON . BABINGTON . ERICKSON

Ken Thompson, paper mill supt.; C. J. Mayeux, master mech.; H. B. (Bud) Lyle, coating supt.; Bob Plankinton, tech. supt.; Bill Babington, mechanical engr.; Andy Erickson, prod. and planning supt.

Needed: Reoriented Research

Not enough research on doing things differently. Also, Dr. Strange tells Executives: "Cut costs or be priced out of world markets"

Appleton, Wis.

• Relatively too much research now underway in the pulp and paper industry is aimed at doing things better or more efficiently and not enough at doing things differently.

Speaking at the recent 23rd annual Executives' Conference at the Institute of Paper Chemistry, Appleton, Wis., John G. Strange, president of the school, said "one of the primary objectives of industry is to improve its productivity and lower its unit costs. Unless this is done, we shall lose our battle with inflation and price ourselves out of world markets. If, however, we place most of our research emphasis on the improvement of present techniques or products, we then may find someone coming along with an entirely different way of achieving the same result or servicing the same market and be confronted with the fact that an outmoded process or product– in spite of its efficiency– is no longer competitive."

Attending the two-day meeting at the institute were more than 250 executives of the pulp and paper industry and allied fields.

Continued Growth

Fall enrollment at the Institute in 1958 was 10% higher than the year before, Mr. Strange said in his annual report. Three factors contribute to this growth, two of them good and "one not so good," the speaker declared. Entering classes have been larger, and there has been a lower mortality or rate of failure. "It would appear, therefore, that there has been some improvement in our screening and admission policies, and that we have perhaps been more skillful in our handling of the students after they have been admitted."

The third and rather disturbing factor is the length of time that it takes the average student to complete his thesis work. This problem is plaguing most graduate schools, Mr. Strange explained, and it is expensive in many ways: (1) more scholarship funds needed; (2) space and equipment are tied up for longer periods; (3) there is a squeeze on dormitory facilities, and (4) the flow of personnel into industry or other careers is slowed down.

Not many years ago a typical student might spend from 12 to 15 months on his thesis. In more recent years some students have taken up to 24 months and in a few instances even longer.

DR. JOHN G. STRANGE told annual Executives' Conference that industry research places too much emphasis on improvement, not enough on doing things differently.

A New High for Research

During the 12 months preceding the Appleton meeting, the various research activities at the Institute reached a new high. An increased staff made it possible to spend more time on institutional and cooperative research. During the year 48 projects were completed, 52 initiated and some 109 were on the active list. Approximately 25% of the projects are being conducted for member firms, another 25% for the allied industry, while the remainder is comprised of group projects or endeavor.

"A good deal of the work at the Institute," Mr. Strange continued, "is concerned with efficiency and the improvement of present procedures. . . It is apparent that we are spending proportionately more time on fundamental principles and in studies that are aimed at new interpretations and new insights. As we progress in this work, it is becoming more apparent that some of our industry practices are perhaps only interim approaches, and not too many years hence the industry may be going about things quite differently."

Budget Struggles

Expenditures for current purposes, Mr. Strange reported, are running at an annual rate of $2,000,000. This is approximately $135,000 more than a year ago, and the increment is primarily due to increased staff and larger scholarship outlays. Income from cooperative projects and other services has grown along with the staff, but scholarship contributions have not kept pace with the augmented needs.

During the 1958-59 year 42 individuals, foundations and companies made scholarship contributions. This is in addition to those who participate in the school's "8% plan" and is a gain of about 35% in numbers over the previous year. Also, in the 1958-59 period five companies joined the Institute membership. Income from the "maintenance portion" of membership dues continues to rise and was expected to amount to $380,000, a gain of 8% over the year before.

Horizons in Pulp and Paper

Expanding horizons present problems, Edwin W. Schoenberger, dean of students, said in the opening session. "New knowledge and experiences have to be welcome; usually they have to be sought out with some diligence; finally, they have to be made a part of a large scheme of things."

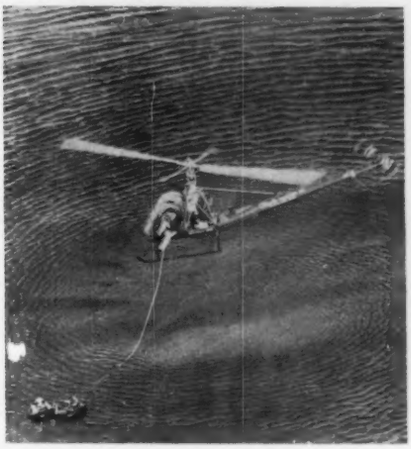
Challenge of Man-Made Fibers

Discussing materials for paper, Donald J. MacLaurin, head of the Institute's Pulping & Papermaking Section, had this to say: "Man will continue to use paper made from natural cellulose fibers, and more of these fibers will come from hardwoods. Continuous multi-stage pulping will be exploited to optimize the properties and qualities of our pulps. The challenge of man-made fibers and films will increase and serve to spur us on to still better serving man's needs through improved use of all our raw materials."

Other speakers on general or on technical subjects included Dean Roy P. Whitney, on education horizons, David L. Luke, who announced a new program of "pioneering research," S. T. Han, Robert C. McKee, Irwin A. Pearl, Willis M. Van Horn, J. A. Van den Akker, George D. Jernegan, Sheldon F. Kurath, Robert L. Jones, W. Thomas Myers, Jr., Samuel H. Dorcheus, Edward F. Thode, Louis R. Busche, Harry D. Wilder, Richard W. Detrick.

The dinner speaker was Paul B. Sears, discussing some perspectives on conservation.

1. **DAY BEGINS as frogman is lofted from beach at Newport, Ore. He will be lowered at buoy-marked location where explosive will blast rocks.**



2. **HIGH EXPLOSIVES are lowered to frogman on rubber rafts. They will place charges on predetermined path of pipe line on ocean floor.**

Deep-Water Effluent Dispersion

Georgia-Pacific blasts through undersea rocks off Oregon coast to rid off-shore pollution.

• Kraft odors reported along northern Oregon beaches have prompted the extension of an effluent line farther into the Pacific Ocean. Lengthening the line by some 250 ft. will carry mill waste to much deeper waters and alleviate surface foaming and the resulting odors.

Release of Odors

When Georgia-Pacific Paper Co. put its Toledo kraft pulp and paperboard mill into operation in January 1958, some 7 mi. of 16-in. pipe carried effluent a quarter mile offshore to a rocky shoal area. Because of surface turbulence in the receiving waters, foam formation resulted causing the release of the odors.

The original line was built to handle 4,000,000 gpd. It rises from sea level at the mill (about 6½ mi. inland) to a maximum height of 207 ft. near the midway point. Pumps carry the effluent to the summit, where gravity takes over for the rest of the distance.

3. **ELECTRIC DETONATOR on shore is attached to boxed explosives via Primacord. Helicopter guides placement of "fuse" underwater to location of next blast in the Georgia-Pacific project.**

Problem of Foaming

To solve the problem of foaming, Georgia-Pacific will not only extend the line 250 ft. to deep water beyond the rock reefs, but will also disperse the waste throughout a 40-ft. terminal section. Thus, the discharge will take place at considerable depth, and the concentration will be greatly reduced.

G-P as the first step in the project gouged a bed through the rocky reefs to accommodate the extension and has since contracted with Healy-Tibbitts Construction Co., San Francisco, for the pipe installation.

This phase of the undertaking—to cost an estimated $137,865—is scheduled to be carried out during the summer months.

4. **TRANSIT MAN ON OBSERVATION BLUFF oversees helicopter's work as pilot guides placement of explosive charge to pave way for kraft mill effluent line.**

5. **THAR SHE BLOWS as tremendous blast shakes undersea rocks. The explosion was one of 15 needed in pipe line extension project to disperse effluent in deep water.**

Measures Continuous Brightness

Lowe Paper Co. measures brightness of raw and coated paperboard stock directly on the machine web with a tristimulus colorimeter

• The paperboard industry is becoming more aware of the need to have instrumentation that can continuously measure and record the primary optical properties of its products, namely gloss and whiteness. The concept of brightness is being replaced with that of whiteness, where the color of white coating is measured with three filters instead of the one filter used for brightness. Gloss specifications are appearing more frequently on orders to coated paperboard mills.

Lowe Paper Co. is a 53-year-old high quality specialty coated paperboard mill at Ridgefield, N. J. It is typical of the mills that have recognized the need for better instrumentation and control to maintain a consistently high level of quality. It has pioneered in the development and use of some instruments for measuring optical properties.

"Brightness is an important property that can be measured continuously and brought under control; so is gloss," explains John C. Rice, technical director of Lowe. "What we wanted," he explains, "was better uniformity for both types of visual properties in our coated paperboard."

The answer to the brightness problem, as developed by Lowe in cooperation with Gardner Laboratory, Inc., is a continuous brightness meter. Two of these units have been in successful operation on both on-machine and off-machine coating for two years.

TRISTIMULUS COLORIMETER on 100-in. paperboard machine measures brightness of uncoated stock. A similar exposure head measures brightness of stock after offset gravure coater.

How It Works

On the board machine, an eight cylinder 92-in. trim machine equipped with Champion and offset gravure coaters, the first brightness meter is positioned between the first calenders and coater; the second brightness head follows the coater. With this arrangement it is possible to control the coating application as well as the top liner and coating brightness.

"It is important," stresses John Cella, project engineer, "that the gap between the measuring head and the web must be constant." The Lowe units are about ⅜-in. ± 1/16 from the web. A plus feature of these tristimulus type colorimeters, equipped with green, amber and blue filters, is that they will measure automatically the degree of whiteness in coated paperboard. The exposure heads are connected in turn to a single recorder. It has an expanded scale capable of measuring to within 2/10 of a brightness unit.

The brightness meter has two regular 6-volt sealed beam headlights as light sources. These are checked regularly to see that they are operating at full efficiency. The photocells in the meter, like the human eye, must get used to large changes in the amount of light impinging on them. Therefore, during breaks it is necessary to cover the opening of the meter with a piece of coated board to keep it activated at normal production levels of brightness.

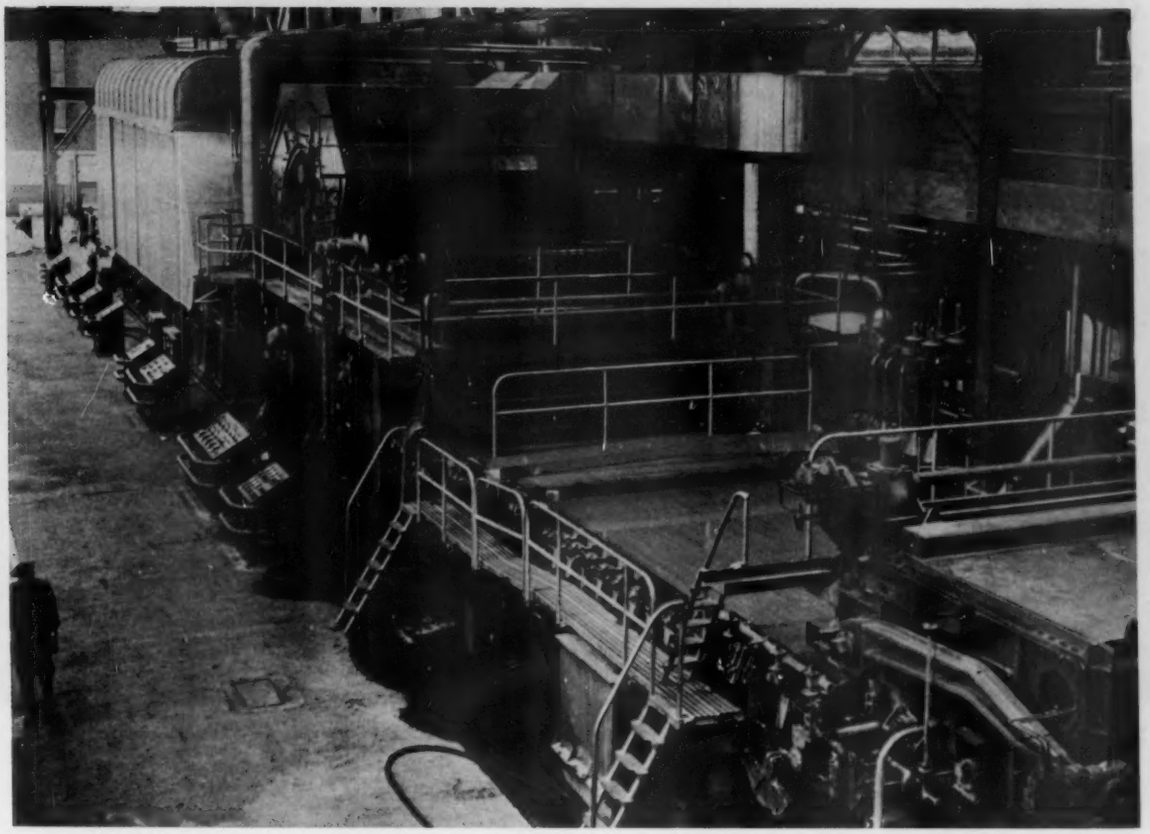
A 94-in. off-machine air knife coater, one of four air knife coaters in operation at Lowe, has also been equipped with a brightness meter.

Lowe Paper Co's. success with the brightness meters follows eight years of similar success with Gardner continuous recording gloss meters on its finishing calenders. Use of these gloss meters has enabled Lowe to eliminate the need for inspectors on these operations. Very sensitive gloss control can be maintained to within two units.

Automatic Skip Meter

Another quality control unit at Lowe is a photometric instrument, developed by Gardner for Lowe, to detect "skip" on paperboard. The exposure head has a light source, sensing photocell, microammeter, relays and control switches. This exposure head is mounted over the moving web of paperboard and provides continuous monitoring during production.

Use of this unit by Lowe has eliminated visual checking of the web for skips or other visual imperfections.



PAPERMAKER'S VIEW of No. 4 machine from mezzanine shows stock forming on wire, positioning of conditioning rolls on press felts and coaxial fans on Yankee dryer hood.

Machine Thrives on Instrumentation

Eddy Co's. new 149-in. high speed Yankee Fourdrinier is, they say,

"The most completely instrumented in the world"

● The eternal lure for papermakers the world over—the completely automated paper mill-looms closer. In Canada at the Hull, Que., mill of the E. B. Eddy Co., one man controls the entire chemical and stock preparation systems by remote control right up to the paper machine. Three men manage the giant machine above.

In the proud parent-like eyes of the Eddy people, this machine is the "most completely instrumented machine in the world." After start-up and subsequent successful operation of this Beloit 149-in. wide, high speed Yankee-Fourdrinier (not commonly used), Kjell Fred Wrangell, chief design engineer, told this publication that "No. 4 machine is a first class toweling machine. It is designed also to manufacture toilet paper grades other than those made on No. 3 machine, and MG waxing grades from 9 lb. to 21 lb. basis weights."

The new machine is part of a general continous modernization program by the Eddy Co. to put their machines to the best use. With No. 4 now in production, Eddy Co. has converted its 116-in. wide No. 2 machine from the production of toweling to sulfite specialities such as books, bonds and ledgers ranging from 20 to 80 lb. (24 by 36/500) operating at speeds from 150 to 650 fpm.

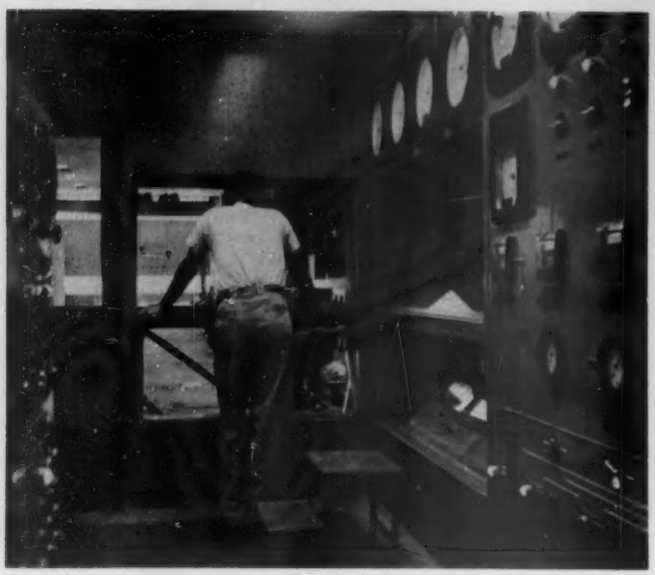
Under the direction of Mr. Wrangell, engineering for the project was done by the company's design engineering department. Assistance on building details were obtained from Foundation Engineering Canada Ltd. (Fenco). The paper machine and all auxiliary equipment was installed, under the supervision of L. Sterns, construction supt., by the company's own installation crew, with F. Frappier as resident field engineer.

The new machine is located at the Lower Mill, adjacent to the building built in 1954 for No. 3 machine close to the 234-in. No. 8 newsprint machine and to the sulfite pulp mill and bleachery. In this location, the supply of slush and wet lap pulps is available.

Besides housing the new No. 4 machine, the building was designed to incorporate a future No. 5 machine.

Start-up of the new machine was on October 20, 1958. Salable paper was made three days later.

Capsule Comments on the new Eddy tissue machine



Stock preparation is controlled in room which overlooks paper machine . . .

NEW MACHINE AT E. B. EDDY CO.

Here, in easy-to-read capsule form, are the important features of E. B. Eddy's new paper machine and mill.

REMOTE CONTROLS for stock and chemical preparation are all grouped in one room at border of paper machine room and stock preparation room. From windows on all four sides, operator can implement remote control by visual observation. Access to control cabinets and records for repairs and maintenance is from the outside of the room.

COMBINATION YANKEE-FOURDRINIER by Beloit has a 149-in. wire, is 80-ft. long, and is designed for toweling, lightweight tissues, napkins and M.G. waxings at speeds ranging up to 2500 ft. per min.

CONTINUOUS CHEMICAL and STOCK PREPARATION are actually run at speed of the machine. One man controls the entire stock preparation system up to the paper machine.

QUIET MACHINE ROOM operations stem from what is primarily a quiet operating paper machine. In addition, acoustical tiling has been used on the suspended ceiling and on the walls of the machine room down to the 6-ft. high wainscoting.

AIR SLITTING AT THE REEL is used, based upon previous successful operation on No. 3 machine. Saw slitting on toweling is also done at the reel.

IMPROVED WIRE LIFE was gained by re-arranging drives at the wet end and putting most of power into the wire turning roll.

FIRST USE OF SULZER VACUUM PUMPS in North America. Features: "low cost, space economy, flexibility of operation, low power requirements and heat recovery."

NEW TYPE HOOD for Yankee dryer, by SF Products Canada, improves hood efficiency 15% to 20%, says the company. This hood features an internal air circulation and reheating system, using the principle of impingement of hot air against the paper. The replacement air to the hood is preheated by the moist exhaust air from the hood in an economizer, and further heat recovery from the exhaust gases takes place in a following direct water heater.

HIGH VELOCITY AIR JET system for after-dryers. Hood is of double sheet aluminum panels with an inner ceiling to adjust drying it uneven.

CLEANER TOWELING results from use of Bauer Centri-Cleaners, which are used primarily because waxing grades require a high cleanliness.

ALL CHEMICALS ARE FED from one location by remote control.

WIRE PIT HAS TWO SKIMMING WEIRS, said to be the first time used, to remove pitch content from white water.

TO ELIMINATE AIR ENTRAINMENT in lines, all stock pipelines are on 7½° rise.

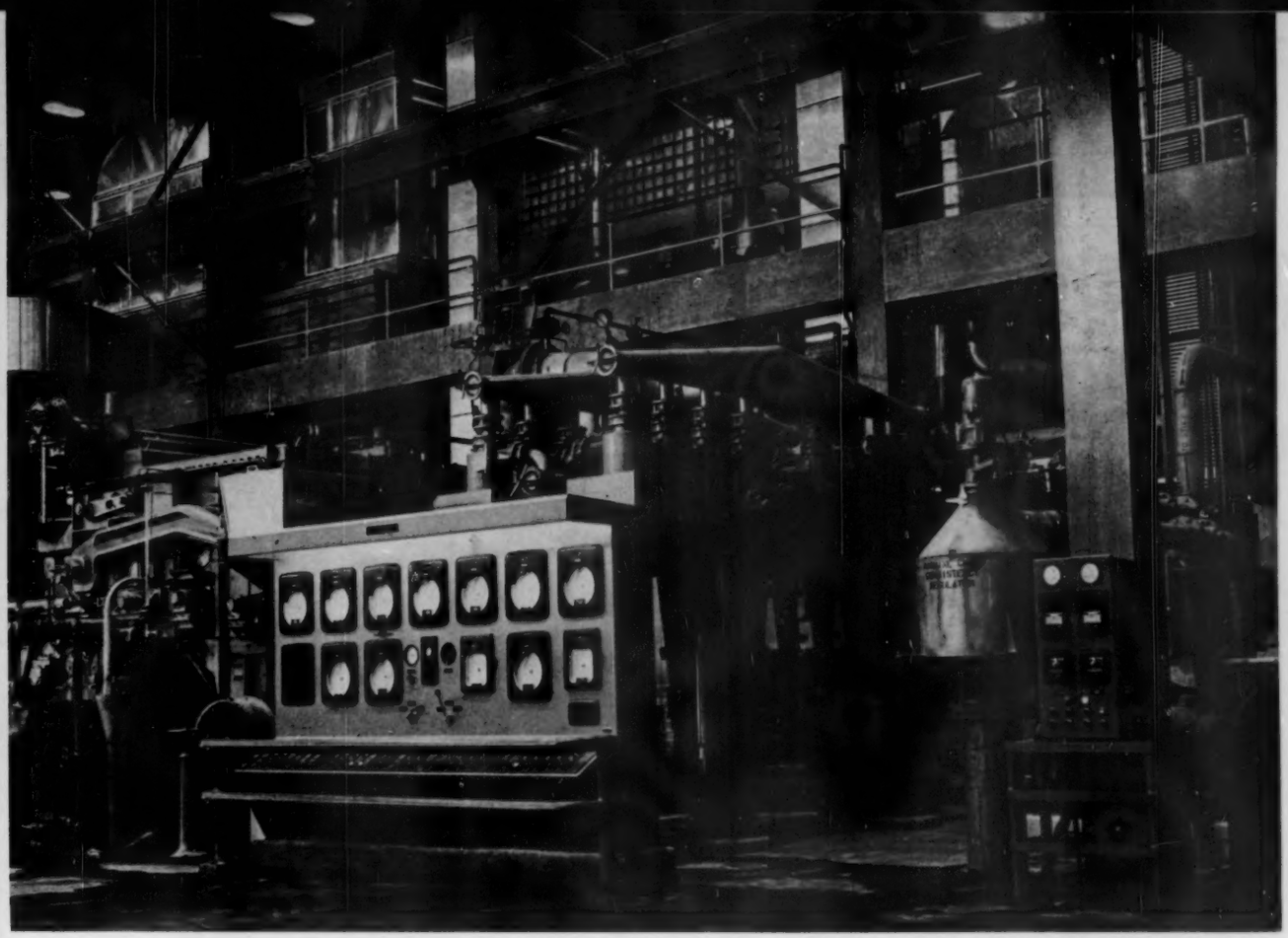
TO PROTECT GLASS LINES for sulfuric acid, eave-type trough hangers are used.

STAINLESS STEEL FOR ALL PIPELINES is used, except for fire and water main and glass pipe. All steam and cold water lines are insulated and aluminum covered to prevent damage from leaks and surface contacts.

MACHINE SPEED is electronically controlled by Reliance type VSMR regulators which provide maximum reliability by dual circuitry and parallel tubes. The paper machine is driven by a Reliance d-c sectional drive of multiple generator type.

YANKEE DRYER IS MACHINED rough on the inside, and on the outside to a high polish, has three oscillating doctors. Operating pressure is up to 125 psi.

MACHINE BUILDING is built in three independent sections with the machine section free to move in rela-



tion to the wet end and dry end sections by suitable expansion joints. The steel frame-work of the building is constructed to withstand earthquake shocks. The building is built upon a pressure grouted area.

PROPER OPERATING CONDITIONS over the entire pressure range for Yankee and after dryers are insured by thermo-compressors. Forced vapor circulating system controls dryer temperature and drains the system.

EXTREMELY WIDE OPERATING RANGE of after-dryers extend from a minimum of 10-in. Hg vacuum to 150 psig maximum. Dual control system, one for pressures up to 30 psig and one for pressures above that are provided. Separate and dual dryer sections can be independently controlled.

"PIPE ORGAN" FEEDS up to three of the six raw pulps in the stock preparation system through magnetic flowmeters to the machine chest. This is a system of interchangeable pipelines connecting stock chests to flowmeters.

CONTINUOUS ADDITION OF CHEMICALS to stock are made as grade requires. Three groups consist of (1) machine chest group (size, starch, dyes, alum, TiO_2 and Mistron Talc) which are added before the machine chest; (2) fan pump group (sodium aluminate, absorption agent and wet strength) which are added at suction of fan pump; and (3) pH group (soda ash and sulfuric acid) which are added to the wire.

CHEMICAL SUPPLY SYSTEM uses PVC piping on discharge side and stainless steel on the suction side except for sulfuric acid which uses glass piping.

Vital Machine Statistics:

Headbox: Air cushioned, pressure type with 16-in. stainless steel elbow stream flow valve. Flow distributor is "E" design. Three 16-in. stainless steel rectifier rolls.

Fourdrinier: 80-ft. by 149-in. Table is level, non-adjustable non-shaking.

Breast Roll: 24-in. dia. with cast bronze shell and floating doctor.

Table Rolls: Four 16-in. dia. dandy type; nine 9 3/16-in. dia. aluminum tube, Micarta covered, plain.

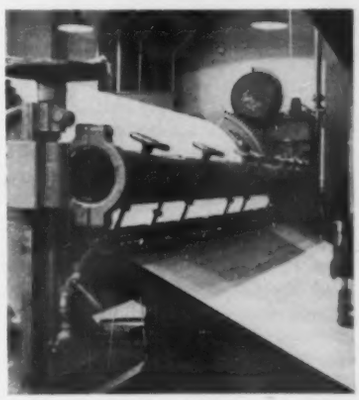
Suction Boxes: Five stainless steel oscillating; four have end-of-grain maple; one is Reslin slotted cover.

Saveall: Stainless steel extends from breast roll up to and including suction boxes. Large area saveall downspouts at front and rear have a submerged discharge of white water into pit beneath Fourdrinier to avoid carrying air of white water to couch pit.

Wire Pit: Designed to reduce air entrainment to a minimum and to allow release of as much air in white water as possible.

Suction Couch Roll: 30-in. dia. with silent drilling pattern with low angle countersunk holes.

Press Section: Top couch or pick-up roll is 22-in. dia., with 1-in. thick rubber of 170 plastometer. Bottom roll is 30-in. dia. with 1-in. rubber cover of 32 plastometer with silent drilling and silencer assembly. Top press roll is 28-in. dia., rubber covered. First pressure roll position on Yankee is duplicate of suction press roll. Two plain pressure rolls can be installed



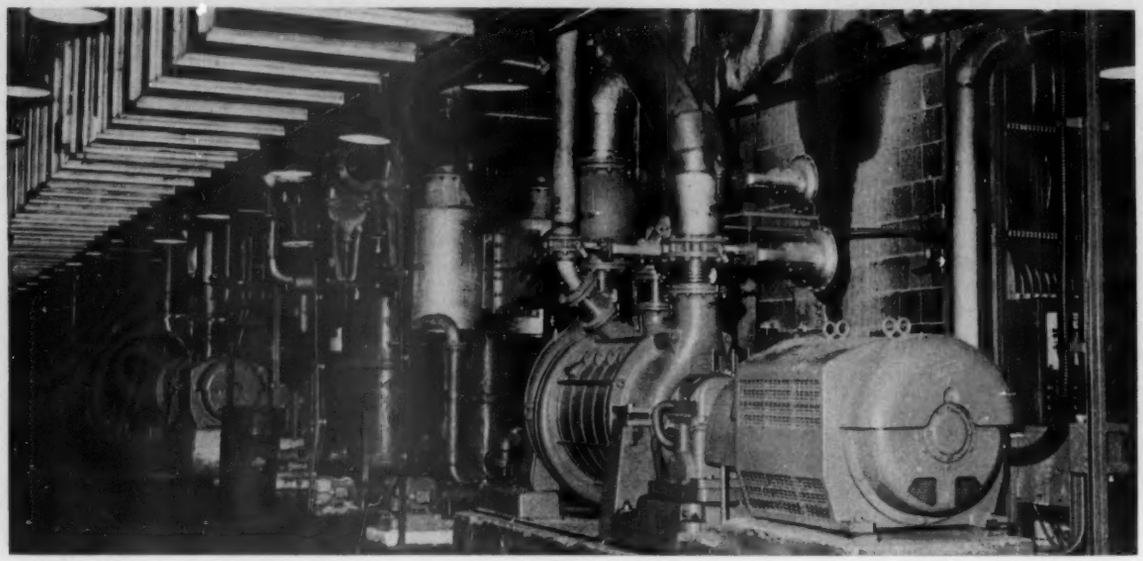
AIR SLITTING AT THE REEL is used for lightweight tissues, based upon successful use on another machine.

in first or second press positions. These rolls and first suction press roll can be interchanged depending upon whether creped sheet or flat sheet is to be produced. All rolls have same crown as No. 3 machine.

Yankee Dryer: 12-ft. diameter, machined rough on the inside, and on the outside to a high polish with three oscillating doctors. Between Yankee and paper dryers there is a brass pipe spring roll, 8-in. dia., and a Mt. Hope expander roll.

After-Dryers: 13 paper dryers, 60-in. dia., suitable for 160 psi, divided into two sections of 5 and 8 dryers. Different temperatures can be run in each section. Space is provided for 6 more dryers if needed.

Horizontal Calender: Three pairs of rolls which can be interchanged when running waxing or tissue grades.



TWO VACUUM PUMPS ARE MORE THAN AMPLE to handle No. 4 machine's requirements. For repairs, one unit can continue to operate on lightweight tissues. Interesting is that heat is recovered from the blowers and used in drying system. Blowers are multi-stage with 3 vacuum branches.

Vacuum System is Compact, Economical and Flexible

In selecting their vacuum system for No. 4 machine, Eddy Co. departed from traditional North American practice and installed Sulzer vacuum pumps and Turbair system. This is the first such installation in North America.

Reasons for their choice are the smaller space requirements (use two units instead of the usual five), lower cost, amount of heat recovered for use in the drying system, lower power requirements, operating characteristics and flexibility of operation.

A Turbair plant consists essentially of two centrifugal blowers, necessary water separators complete with pumps, piping and control equipment. An interesting feature is that the blowers are multi-stage radial flow units specially designed with the required number of suction branches at selected stages in each of the different vacuums to be obtained. These vacuums are selected to suit the requirements of the individual suction points on the paper machine.

In the Eddy installation, there are two 8-stage high speed centrifugal blowers which can operate separately or in parallel. Each blower has three vacuum branches, high at 20-in. Hg, medium at 11 and low at 8. Piping is so arranged that the couch is connected for use on either the high or low vacuum branches while the press and pressure rolls are connected to the high branch only. The blowers operate at 6300 rpm driven by 500 hp, 1760 rpm motors through speed increasers.

The beauty of the Sulzer installation, explains Chief Design Engineer Fred Wrangell, is that the two blowers are designed and connected so that the paper machine can continue to operate only on lighter basis weights or at a somewhat reduced speed, if one blower needs to be shut down. Thus, in case of repairs, one unit can continue to operate on lightweight tissues. Although one larger unit would have been sufficient to satisfy the vacuum requirements, two smaller units were installed for this purpose.

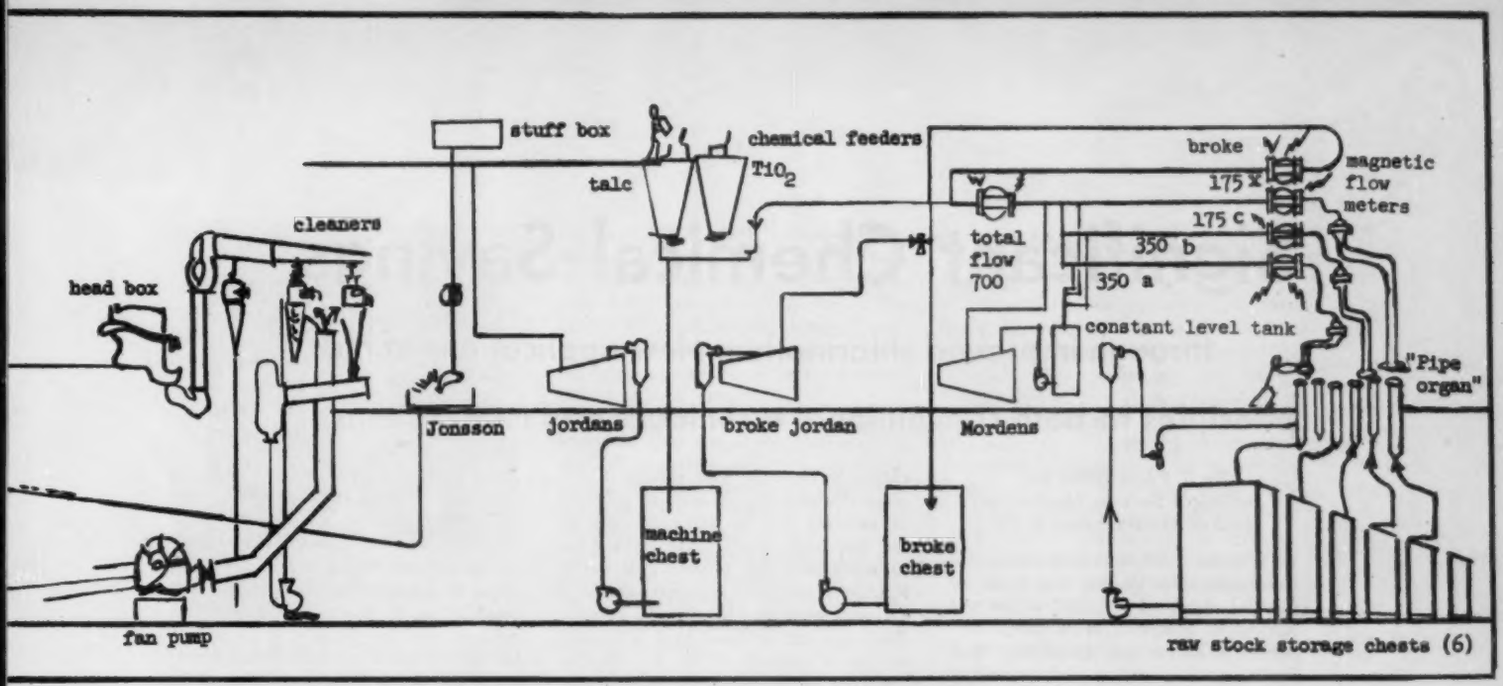
Another interesting point is that heat generated in the blowers is recovered in the form of dry air at approximately 275°F which is used in the Yankee dryer vapor absorption system. This is a considerable saving.

Each vacuum point on the paper machine has its own water separating unit. This is a primary separator to which is attached a specially designed separator and a pump to insure complete extraction of water from the air before the air reaches the blower.

Each blower has a forced lubrication system consisting of a main geared oil pump driven by the blower shaft and a motor driven auxiliary oil pump. This auxiliary oil pump also serves during start-up and shutdown of the blower and as a safety measure, it starts up automatically, should the oil pressure fall below the minimum desired level. An alarm is also sounded.

Economical powerwise

The Sulzer blower maintains substantially the same vacuum at all times while the volume of air handled varies according to the sheet and felt conditions on the machine when running a particular grade. Since power requirements are proportional to the volume of air handled, the units tend to operate very economically powerwise, says Mr. Wrangell.



FOUR FURNISHES ARE PROPORTIONED automatically through magnetic flowmeters at right. "Pipe organ" gives flexibility in selecting three of 6 different pulps used. See story below for more complete details.

Stock and Chemical Preparation Are Continuous

A striking feature of the stock and chemical preparation systems at the new E. B. Eddy paper mill, explains Mr. Wrangell, is that "for the first time a whole machine has been equipped with Foxboro magnetic flowmeters on all stocks. Everything is on a continuous basis and we are actually running stock preparation at machine speed.

"The main reason for instrumentation is to eliminate the necessity for manpower. Now you can actually record what a valve is doing so that when you have difficulty you can make adjustment on the spot and you can see what you are doing. You also have a record of what has happened in the mill during the night; a chronological story of what goes on with respect to the machine. Another point, when you are producing a certain product, you can plot your charts and make a case history and the next time you make that grade all you have to do is refer to these charts and set your equipment accordingly.

"With our present set-up, we can actually change basis weights, can make a complete range of operations without shutting the machine down."

Six Different Pulps Used

Raw stock storage chests hold 5 tons of pulp each for bleached spruce sulfite, bleached poplar sulfite, unbleached sulfite, bleached groundwood and kraft at 3% consistency. All grades, except bleached groundwood and kraft, are available in slush form but the stock preparation system is designed to use either slush or lap pulps.

Two No. 3 Kennedy-Jones Pulpmasters slush the lap pulp. Pumps and piping are arranged so that slush can be pumped to any one of the six storage chests.

The "Pipe Organ"

Of the six different raw pulps, Eddy uses a maximum of three at one time plus broke. To provide flexibility in channelling this combination of pulps Eddy has designed a special distribution system. On one side are six pipes leading from the pulp storage chests and on the other are three pipes with flexible ball joints which can be screw threaded onto the selected three raw pulp lines.

Of special interest is the proportioning of the four furnishes to the machine chest. Four magnetic flowmeters are used, designated A, B, C and X. B and C are manually set or the desired percentage of the particular stocks being used. The A valve is set automatically so that the total flow is 100%. X valve (broke) is then set at the desired percentage of broke used.

Kjell Fred Wrangell
Chief Design Engineer

Norway-born and a graduate of the Naval College in Norway, Engineer Wrangell worked in the Hunsfoss paper mills until a paper strike, came to Quebec with $5, got his first job with pick and shovel for 25¢ an hour on a railroad. He got his material handling experience with Link-Belt and worked for Solvay for two years in Syracuse, N.Y., has been with E. B. Eddy Co. for 30 years.

Suppliers of major equipment for E. B. Eddy new paper machine

Paper Machine: Beloit Iron Works
Instrumentation: Foxboro Co.
Ventilating systems: SF Products Canada Ltd.
Piping, electrical and instrumentation: Canadian Comstock Co.
General building contractors: George A. Crain & Sons
Vacuum system: Sulzer Bros.
Stock chests: Stebbins Engineering & Mfg. Co.
Stock chest agitators: Sherbrooke Machineries Ltd.
Pulpers: E. D. Jones & Son Co.
Consistency regulators: DeZurik Corp.
Refiners: Morden Machines Co.
Centri-Cleaners: Bauer Bros Co.
Dry chemical feeders: Wallace & Tiernan Co.
Dryer drainage and temperature control: Ross-Midwest Fulton
Pumps: Canadian Allis-Chalmers, Pulsa-Feeders, Hills-McCanna, Canadian Pump Co.
Machine drive: Reliance Electric and Engr. Co.

Significant Chemical Savings

. . . through improved chlorination. New applications of old principles to both conventional techniques and new systems.

By E. PAUL DUNCAN
Technical Service Supervisor
Hooker Electrochemical Co.

● Wherever chlorine is applied, efficient utilization of this important industrial chemical is based on proper mixing of reactants with finely dispersed chlorine gas. Providing ideal conditions for mixing and dispersion of this gas presents problems. From an engineering standpoint, the same problems exist with all gases, but the additional factor of corrosion must be considered in handling chlorine.

From an economic standpoint, the following factors are paramount to cost cutting in operations with chlorine:

1. **Elimination of all traces of chlorine gas at the top of chlorination towers and at the washers.**
2. **Holding a uniform low residual at the washers.**
3. **Reduction of labor costs in associated processes through adaptation of automation.**

To facilitate working to these ends: The mixing of chlorine with pulp should be improved, automatic bleach liquor systems installed, and redox for controlling pulp chlorination utilized.

Direct Chlorination

In theory and in practice it is known that the reaction between all but a fraction of the chlorinatable constituents of pulp takes place in a matter of minutes. Retention of 30 to 60 min. is provided to completely react chlorine with all the pulp. It is desirable to chlorinate most pulps as heavily as possible in the first stage in order to minimize strength and yield losses in subsequent treatment. In practice, the attempt to get maximum chlorine into the primary stage often results in wasted chlorine. In fact, there are few mills where strong chlorine odors are not evident in the hood of the chlorination stage washer. Losses directly in chlorine gas and chlorine water can be as high as 5% and possibly 10%, representing tons of chlorine per day.

Achieving maximum mixing efficiency is not easy. The gas has a tendency to collect and remain in large bubbles. Given a chance, it readily channels through any media. Complete dispersion and uniform solution of chlorine can be achieved only in the relatively small stock lines prior to entry into the tower. This done, the tower acts truly as a retention vessel, and uniform chlorination results. Residuals can be held very low, and no gas is evident at the top of the tower or at the washers. Some mills achieve adequate mixing for their particular chlorine requirement through the use of mechanical mixers in the stock line.

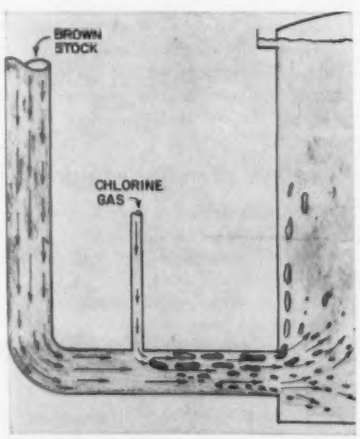
Time and Turbulence Essential

With stock flowing through the line at only 2-3 fps, it is evident that large bubbles of chlorine must sweep into the tower unless there is a great deal of turbulence over a period of time. Time and turbulence are necessary to continuously break up the large bubbles and disperse them for solution and intimate contact with pulp fibers. Turbulence without time is not satisfactory because small chlorine bubbles will readily reform into large bubbles. Channeling has been in evidence on chlorine towers where the lining immediately inside and up the tower at the stock entrance shows evidence of contact with raw chlorine gas. The results are local overchlorination, channeling and non-uniform residuals indicating nonuniform chlorination of stock. All these conditions are extremely undesirable to good quality control in the bleachery.

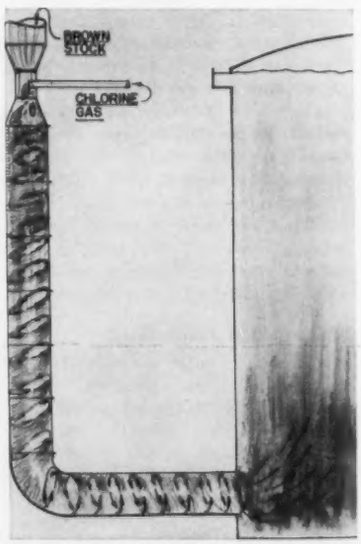
Available stock line stationary mixers, developed by Hooker, through which chlorine-impregnated stock passes enroute to the tower cause the stock to spiral with velocity and turbulence as it moves along. Central spiders and the peripheral combs of the mixers break up pulp bundles and keep the fibers dispersed. Also, they continually break up chlorine bubbles and thus make for intimate contact between the fibers and dispersed chlorine.

By maintaining these intimate, turbulent conditions through at least three stock line mixer sections, most of the chlorine gas starts to react, and the remainder is in uniform solution before the stock enters the tower.

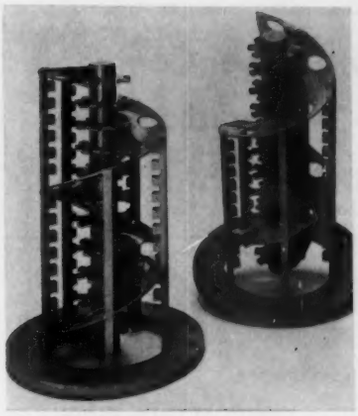
Recent installations of mixers in kraft and sulfite mills reportedly saved chlorine and materially improved quality. Specific advantages reported: (1) Chlorine savings of 5% or more; (2) uniform chlorination of pulp; (3) residuals held to as low as 0.1 to 0.2 grams per liter with complete assurance; (4) residuals uniform throughout the pulp mass leaving the chlorine tower; (5) over-all bleach plant efficiency increased because results of the primary stage are more uniform,



CONVENTIONAL METHOD of injecting chlorine into brown stock.



CHLORINE INJECTION using Hooker non-mechanical stock mixers.



REMOVABLE WORM BAFFLES from Hooker stationary stock mixers.

and subsequent bleaching requirements can be determined with more assurance; (6) bleached pulp product cleaner.

These indicate savings in chlorine and improvements in operation and quality through more efficient mixing. Each mill has its own particular factors to be considered. The mixers are available in both rubber-covered steel and welded high-impact Koroseal PVC. Both materials of construction have proved satisfactory. The choice of material and internal construction of the mixers requires careful consideration of operating procedures and local conditions.

In connection with economies to be found in first stage chlorination, the use of oxidation-reduction potential measurement for automatic control of chlorine flow is recommended. Experience with redox control in bleach liquor production shows this type of control to be dependable, the signal being derived from the ratio of reacted chlorine (as chloride) and chlorine in solution.

Obviously each installation needs to be tailored to the particular mill. The redox signal can be picked up from a continuous sample of stock water withdrawn through a continuous sampler. Location of the latter will depend on efficiency of mixing. With efficient in-line stationary stock mixers, a time lag as low as 30 sec. should be possible. With poor mixing, or in cases where channeling in the tower is evident, it may be impossible to get a representative sample for control.

Since the redox electrodes measure only the ratio of chloride to chlorine, control is not appreciably affected by changes in consistency or initial bleachability. For each installation it will be necessary to establish experimentally a control curve plotting millivoltage at the sample point corresponding to the desired final residual against production rates. Once this curve is established, the operator can adjust the set point, and chlorine addition will be automatic, taking in account all variables.

Economies in chemical consumption will be achieved through controlled chlorine addition here and in subsequent bleaching stages because much of the guess work will have been eliminated. Bleaching chemicals can be added in all subsequent stages with accuracy once the bleachability is automatically held constant at the end of the chlorination stage.

Redox control of chlorination holds promise as a cost cutting and quality improving tool for the industry.

"Lemon Grass Mill" Expands

Will make papers, boost paperboard production under new management and ownership alignment.

Guatemala's famous lemon grass mill is due for a face-lifting. Using the locally-grown grass in the production of paperboard, the plant is said to be the only one of its kind in Central America.

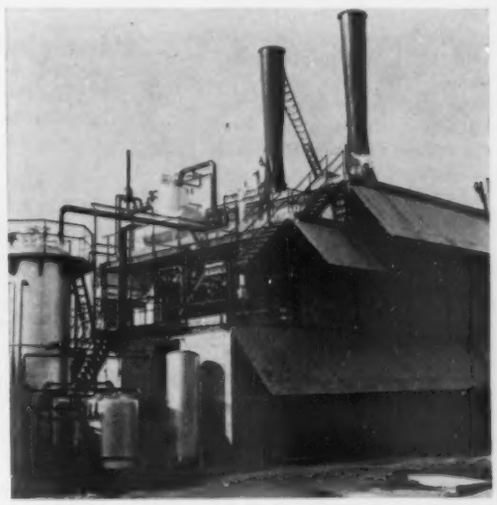
First step in the expansion program is the installation of new stock preparation equipment for the cylinder machine.

The second phase of the project gives the mill versatility. That is the installation of a 110-in. Fourdrinier with its own stock system. By the end of 1959 the plant will be producing a multitude of grades ranging from 12-lb. tissue to 60- and 70-lb. kraft. The bleached and unbleached papers will be marketed throughout Central America.

Behind the face-lifting is the formation of Industria Papelera Centroamericana S.A. Local interests are cooperating with the Gottesman Organization, New York, in the expansion. Explains Ira D. Wallach, president of Central National Corp. and of Central National Commercial Co. Inc. (both Gottesman companies): "We are especially familiar with this area through our overseas paper sales. That's why we joined forces with Minor R. Keilhauer and Jamie and Enrique Arimany, owners of the former Papelera Industria Guatemalteca paperboard mill at Escuintla. Our common effort is to build up the Guatemalan industry."

A new foundation has been laid based on plans drawn up by Alvin H. Johnson & Co. Inc., New York, consulting engineers.

The mill is the only one in the world using lemon grass as a papermaking fiber. After the grass has been processed for oil, it is mixed with wastepaper as furnish for corrugating containerboard.



POWER FACILITIES ARE AMPLE for Guatemala mill expansion needs. System is rated at 1,250 kva.

NSSC Recovery Installation

On stream is Mead Corp.'s neutral sulfite recovery plant at the Heald div. in Lynchburg, Va. Built at a cost of $3,000,000, the operation is housed in an eight-story building. Specially-designed equipment removes waste materials formerly discharged into the James River and converts them into usable chemicals.

This is the first large commercial-size installation of the Mead Process, developed by the firm's Research & Development dept. Waste is washed from the pulp and concentrated in evaporators to a point where it can be burned in a furnace. The resulting ash is regenerated to chemicals suitable for reuse in the pulp mill. At peak volumes the new Mead Process is expected to remove approximately 60-70% of the solids and organic material from waste.

New Labor-Management Contract for West Coast

A one-year contract renewal calling for 3 percent general wage increase covering about 20,000 employees in 46 Wash., Ore. and Calif. pulp-paper mills has been accepted retroactive to June 1. The terms, arrived at after 15 days negotiation between representatives of management and labor, brings the hourly base rate for men to $2.12, for women $1.805.

In addition to the general wage increase, Dec. 24th was approved as a paid holiday (making a total of seven) and other holiday pay schedules were adjusted upward. Terms for the contract renewal increases company contributions to health and welfare up to 90 percent of the basic cost.

With fringe items, the settlement provides for a package totaling 11½ cents an hour average increase adding $4,166,240 to the annual payroll of Pacific Coast Assn. of Pulp & Paper Manufacturers member mills.

Representative Pulp and Paper Companies Sales and Earnings—1st Quarter 1959

	Net Income (000)	Income Bef. Taxes (000)	% of Sales	Net Income (000)	Net Per Share
MARKET PULP (Also lumber, etc.)					
Brown Co. (11/30)	$ n.a.	$ n.a.	—	$ 11	$0.004
Georgia-Pacific Corp.	39,343	3,900	9.9%	2,750	0.66
Puget Sound Pulp & Timber	7,777	1,996	25.7	958	0.37
Rayonier Inc.	32,170	5,727	17.8	3,041	0.55
MacMillan & Bloedel Ltd. (fiscal yr. 9/30)-(2nd Qu.)	44,466	6,353	14.3	3,070	0.58
Weyerhaeuser Timber Co.	100,137	20,907	20.9%	12,897	0.43
NORTHERN INTEGRATED COMPANIES					
Consol. Water Power & Paper	19,901	2,903	14.6	1,324	0.52
Diamond Gardner Corp.	44,038	n.a.	—	1,940	0.51
Fibreboard Paper Products	27,337	2,148	7.9	1,066	0.61
Glatfelter Co., P. H.	6,226	1,135	18.2	514	1.40
Hammermill Paper Co.	12,685	1,046	8.2	529	0.47
KVP (fiscal yr. 9/30)-(2nd Qu.)	13,282	1,324	10.0	651	0.72
Oxford Paper Co.	18,019	1,188	6.6	555	0.43
Great Northern Paper Co.	12,354	320	2.6	153	0.15
INTEGRATED—NORTH & SOUTH					
Champion Paper & Fibre Co. (fiscal yr. 3/31)-(4th Qu.)	44,591	n.a.	—	2,084	0.42
Container Corp. of America	66,236	8,502	12.8	4,096	0.38
Crown Zellerbach Corp.	120,758	15,975	13.2	8,311	0.58
International Paper Co.	239,185	36,130	15.1	18,016	1.37
Kimberly Clark Corp. (fiscal yr. 4/30)-(3rd Qu.)	85,295	10,486	12.3	5,298	0.62
Mead Corp.	69,300	5,634	8.1	2,669	0.54
St. Regis Paper Co.	95,356	10,048	10.5	5,519	0.64
Scott Paper Co.	6,167	397	6.4	197	1.10
Union Bag-Camp Paper Corp.	43,063	10,324	24.0	4,894	0.66
West Virginia Pulp & Paper Co. (fiscal yr. 10/31)-(1st Qu.)	55,502	5,157	9.3	2,757	0.52
NON-INTEGRATED PAPER COMPANIES					
American Writing Paper Corp.	n.a.	281	—	135	0.50
Sutherland Paper Co.	15,952	993	6.2	480	0.42

The sales and earnings for the first quarter of 1959 were especially prepared for PULP & PAPER by Cyrus J. Lawrence & Sons, members New York Stock Exchange, from statistical services and published reports. While the figures are believed to be correct, no guaranty is given as to their accuracy.

Pacific Coast Industry Tabulates Man Hours

The total number of man hours worked in the Pacific Coast industry during 1958 showed a moderate reduction over the year previous. Until 1957, when a slight reduction was reported, employment statistics had shown a steady rise for almost a decade.

Contributing factors to last year's decline include modest production decrease (based on per-mill average), general cost trimmings and increased efficiency.

Report for 1958

The following Pacific Coast Assn. of Pulp & Paper Manufacturers data reflects employment trends in 44 California, Oregon and Washington mills (number of participating mills is not necessarily constant throughout the reported period):

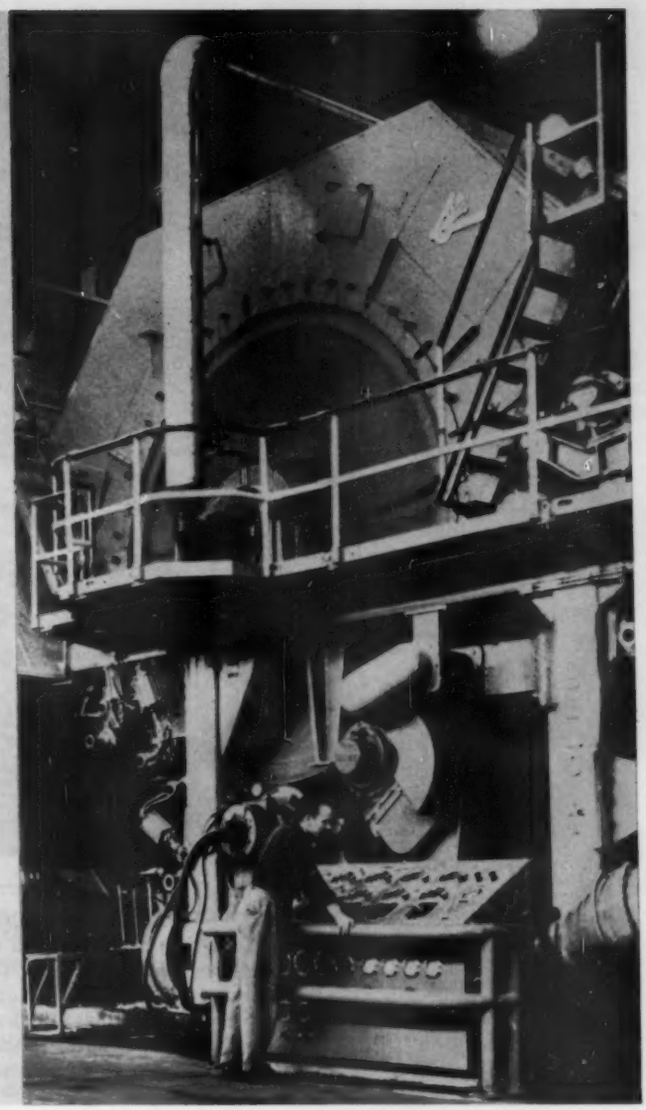
Number of hourly employees—

1959	19,000
1958	19,200
1957	19,300
1955	18,100
1950	15,500
1945	12,000
1940	10,000

Total man-hours, including mill management and overhead personnel working on plant site—

1958	44,158,221
1957	46,840,187
1956	47,223,923
1955	45,495,764
1954	44,171,547
1953	42,500,000
1952	40,700,000
1951	40,500,000
1950	38,500,000
1949	35,500,000
1948	35,000,000

NEW YANKEE DRYER at E. B. EDDY features SF HIGH VELOCITY IMPINGEMENT HOOD



This Yankee hood at The E. B. Eddy Company, Hull, is an outstanding example of SF advanced drying principles in action.

The high velocity impingement hood is fitted snugly over the Yankee dryer. Two opposing rows of axial flow type fans distribute the drying air through a perforated inner shell onto the web. Air is internally circulated back to the fans through heating coils. The air supply can be regulated to even out differences in dryness across the sheet.

Low power consumption is a feature of this new type SF hood. All power is put into velocity impingement on the sheet, which increases the outside film coefficient of the web. Make-up air is supplied at the dry end and moist air exhausted at the wet end. With its internal reheating and recirculation system, the entire unit is remarkably compact.

An SF high velocity hood can be installed on practically any existing Yankee dryer to increase evaporation and heat economy and, thus, operating capacity. The same system, with modifications, is used for coating dryers, felt drying and ordinary paper dryers.

AMERICAN SF PRODUCTS, INC.

420 Lexington Avenue, New York 17, N. Y.

In Canada: SF Products Canada, Ltd., 940 Cote de Liesse Road, Montreal 16, P. Q.

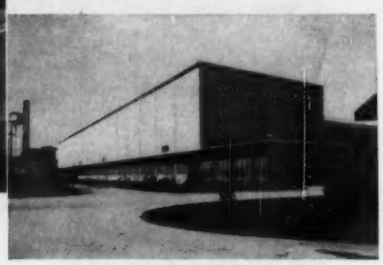
COOSA RIVER NEWSPRINT COMPANY

COOSA PINES, ALABAMA

New PULP AND PAPER MILL FACILITIES

designed and constructed by RUST

Aerial view of Coosa River Newsprint Company, with new machine room to the right of V-shaped administration building.



Machine room and mill office building.

ONE OF THE WORLD'S LARGEST PAPER MACHINES was installed as part of a $32,000,000 pulp and paper mill expansion program, with the design and construction being handled by Rust's Birmingham office. Expansion of existing facilities consisted of a new semi-chemical process plant for hardwoods; a 70,000 lbs. per hour bark burning boiler; bark and wood storage and groundwood preparation facilities; chlorine dioxide generating and bleaching units; brown stock washers with a capacity of 250 tons per day; two new settling basins and a new 336-inch paper machine, designed to operate at 2500 f.p.m.

The exterior of machine room building, 115 feet wide by 775 feet long, is of corrugated asbestos and blue porcelain enameled steel, which makes a striking example of a modern industrial building.

Three grinders added to supplement groundwood production.

Rust's Services

Large projects, like Coosa River Newsprint's expansion, are in reality made up of many smaller ones, such as steam plant, chimneys, concrete bins, foundations, electrical work, refractory and boiler brickwork and equipment erection. Single contracts for such specialties as these have played a major part in Rust's growth.

For the past twenty-five years, Rust has always had a major paper mill project under way. Specialists located at Pittsburgh and Birmingham are prepared to help you meet the pulp and paper industry's needs for the future.

New paper machine has a capacity of 2,500 feet of newsprint per minute.

THE RUST ENGINEERING COMPANY

- 930 Fort Duquesne Boulevard, Pittsburgh 22, Pa.
- 2316 Fourth Avenue, North, Birmingham 3, Ala.

P-6

TWO LANGSTON WINDERS AT WATERFORD, N.Y. REWIND FELT-MARKED, CONSTRUCTION AND SPECIALTY PAPERS RANGING FROM 30-LB. TO 150-LB. BASIS WEIGHT

THE **Langston Leader** PAPER MILL EDITION

Leadership...by design

SAMUEL M. LANGSTON CO. • CAMDEN 4, N. J.

AUGUST, 1959 | *Published for the information of paper and board mills* | VOL. 1, NO. 4

At Mohawk Paper Mills, Inc.

THREE NEW LANGSTON WINDERS WIN PRAISE

Specialty Paper Producer Expands, Modernizes Plant, Lauds Langston Equipment

Up the Hudson River, in the industrial complex which is Albany-Schenectady-Troy and a galaxy of satellite communities, Mohawk Paper Mills, Inc., is one of the stars that brightens the region's fame far beyond its borders.

Wherever business demands fine text and cover papers for advertising, direct mail, annual reports or commercial announcements, Mohawk papers may be found represented. So, too, where school children work out imaginations on poster and construction paper, a line Mohawk makes in 30 different colors—more colors, the company says, than made by any other mill of comparable size.

Examine a finely embossed or fluted box for jewelry and the chance is a good one the flock or lining is on Mohawk base stock.

This Issue Is Printed on Mohawk Navajo Text

This issue of the Langston Leader is printed on Mohawk's 80-pound Navajo text. It is described by the manufacturer as "an unusually attractive text paper for prestige appearance and brilliant performance in fine printing. A bright natural white background for deep blacks and true colors ... a smooth, receptive surface for letterpress, offset and gravure."

Three Fourdriniers

Mohawk Paper Mills produces on three Fourdriniers, one at Cohoes about 10 miles north of Albany and two at Waterford several miles further north. A non-integrated operation, the Mohawk mills annually produce about 24,000 tons of various texts, covers, vellums and specialty papers.

Expansion and modernization is very much in evidence at the company's plants. A new warehouse at the Cohoes Division provides 48,000 square feet of storage space for finished paper. A new warehouse at the Waterford Division is of equal size, and at Waterford a new 14,000 square-foot building has just been completed where two cutters will soon be installed.

At Cohoes, the 110-inch Sandy Hill paper machine has been fitted with a new Rolla-Reel, and plans have been made to install a new drive, according to T. Charles Nixon, Cohoes mill manager.

At Waterford, the two 72-inch Sandy Hill Fourdriniers have been improved recently with Pope-type reels.

Langston Winders Outstanding

But, outstanding at both mills, according to company officials, has been

Three Langston Winders

(*Continued from preceding page*)

the installation of three new paper machine slitter and winders built by Samuel M. Langston Company.

The Langston winder at Cohoes is a 112-inch machine. According to production manager Myron Flotow, "It is doing an excellent job of rewinding tight, compact, evenly wound rolls."

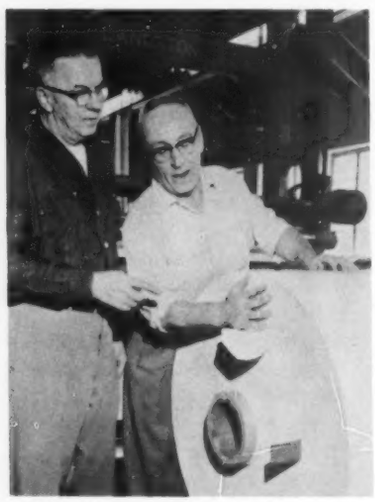
Says Flotow: "Our Cohoes production ranges from 13-pound (17 by 22) basis to 175-pound (25 by 38) basis. We're rewinding into rolls that vary from 9 inches wide by 40 inches in diameter to two 50-inch wide rolls by 35 inches in diameter.

Happy With Performance

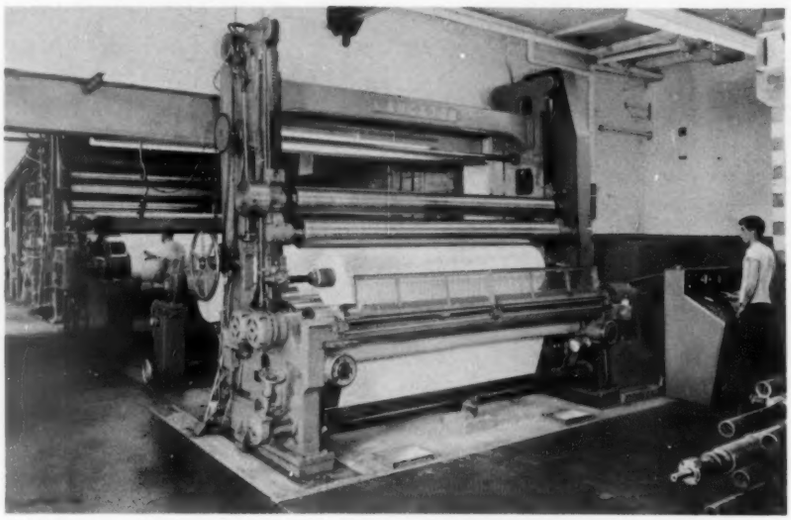
"The Langston winder keeps up with production, makes nice clean cuts, is easy for the men to learn to run and operate and easy to thread through. The slitters are handy to get at for setup. We're happy about the way this new winder is performing."

The production at Cohoes includes the finer grades of texts, covers, vellums and ledgers, mostly white. After they are slit and rewound, the rolls are taken to either of two, 110-inch wide rotary duplex cutters where they are sheeted to specifications.

The two paper machines at Waterford,



CLEAN-CUT, square-ended roll passes examination by assistant Waterford manager Otto Zieball, left, and superintendent William J. Roberts, Sr.



AT COHOES. Langston winder on 110-inch paper machine slits and rewinds fine grades of text, vellum, cover and ledger, ranging from 13-lb. (17 by 22) basis to 175-lb. (25 by 38) basis.

in addition to poster and construction papers, produce specialty papers for box facings, linings and covers, such as Mohawk's Navajo cover which comes in 12 colors. Here also are made felt-marked papers such as Artemis, Cortlea and Diana.

Big Improvement Cited

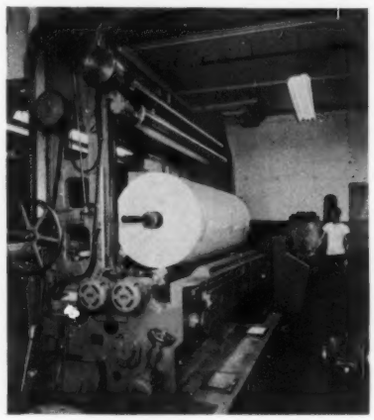
Both machines are running a 66-inch-wide sheet ranging from 30-pound to 150-pound (24 by 38) basis weight. Langston 72-inch wide slitter and winders slit and rewind the sheet to specifications.

"The Langston winders have made a big improvement in our rolls," says Waterford plant superintendent William J. Roberts, Sr. "The rolls are harder and they are wound off evener than we have ever been able to accomplish before," he adds.

Otto Zieball, assistant manager, says: "The slitters are very good. Their action is sharp and clean. They are trouble free. We really approve of the fixed shear angle feature of the slitters. There's practically no chance of improper setup or of their getting out of line. And the Mt. Hope rolls are important. They give good separation."

Winder Features

Each Langston winder utilizes a General Electric variable speed drive. Each is a precision built machine, engineered to produce the finest quality slitting and winding.



OPERATOR hydraulically ejects roll by push-button.

All rotating rolls are dynamically balanced for 500 fpm in excess of contract speeds—a Langston standard feature. Each machine is equipped with Langston's time-proven clean cut, shear cut slitters. Other Langston standards on the equipment include console-mounted and operator controlled rider roll torque drive and rider roll hold-down to tightly secure the sheet to the core and achieve a good hard roll center.

The winder at Cohoes in addition is equipped with roll ejector and Langston patented rider roll density controller. Controls for these features are console-mounted for operator control.

CONVEYOR PROBLEMS SOLVED

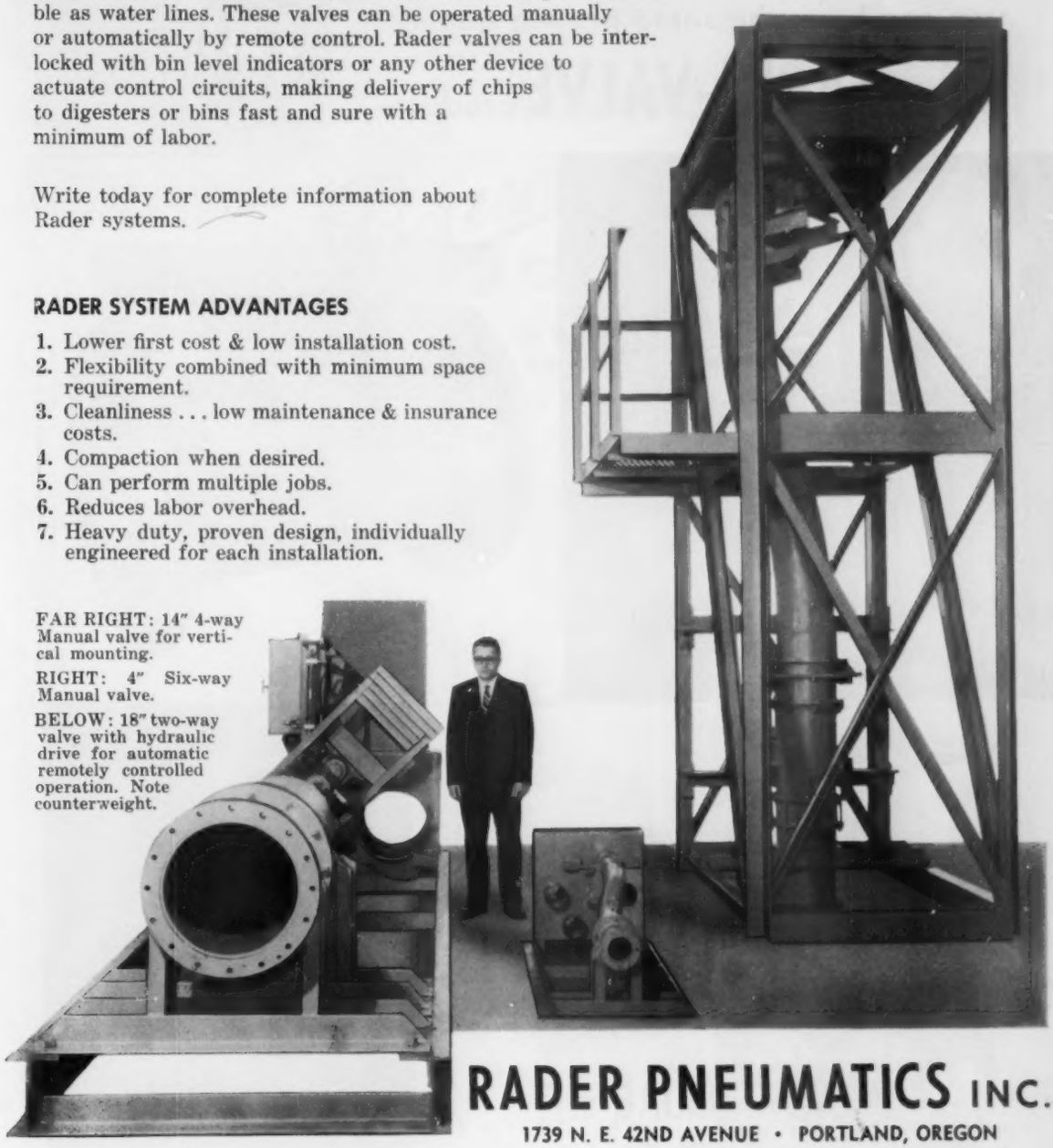
BY VERSATILE RADER SYSTEMS!

Mill operators find Rader pneumatic systems offer the most in versatility for handling wood chips, bark, hog fuel, sawdust, and chemicals. These high-pressure pipelines convey in all capacities and to any distance, whether underground, vertically, overhead, around corners . . . even under water. Rader diversion valves make chip flow as flexible as water lines. These valves can be operated manually or automatically by remote control. Rader valves can be interlocked with bin level indicators or any other device to actuate control circuits, making delivery of chips to digesters or bins fast and sure with a minimum of labor.

Write today for complete information about Rader systems.

RADER SYSTEM ADVANTAGES

1. Lower first cost & low installation cost.
2. Flexibility combined with minimum space requirement.
3. Cleanliness . . . low maintenance & insurance costs.
4. Compaction when desired.
5. Can perform multiple jobs.
6. Reduces labor overhead.
7. Heavy duty, proven design, individually engineered for each installation.



FAR RIGHT: 14" 4-way Manual valve for vertical mounting.

RIGHT: 4" Six-way Manual valve.

BELOW: 18" two-way valve with hydraulic drive for automatic remotely controlled operation. Note counterweight.

RADER PNEUMATICS INC.

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you can have the same proven quality

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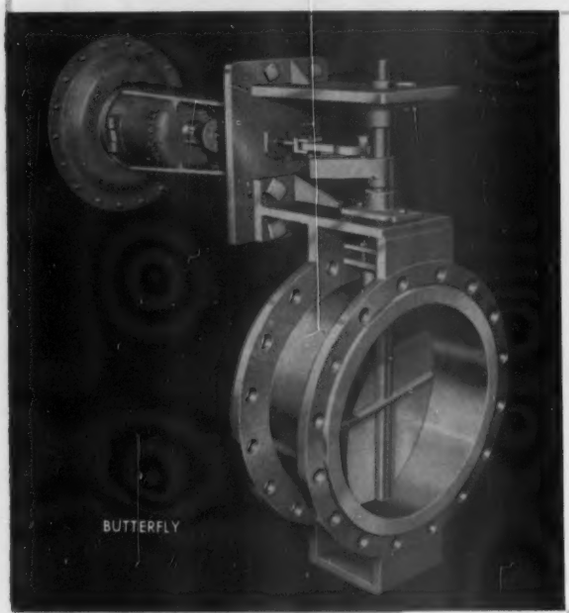
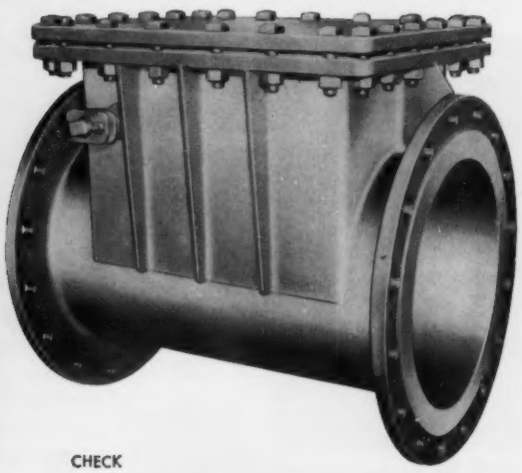


BUTTERFLY



CHECK

GATE

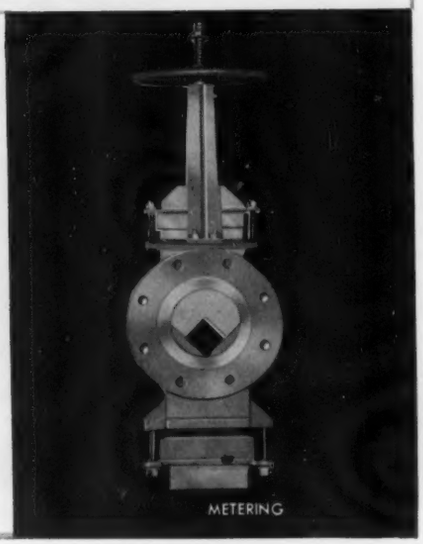
FABRI-VALVE

FABRI-VALVE CO. OF AMERICA

2100 N. Albina, Portland, Oregon

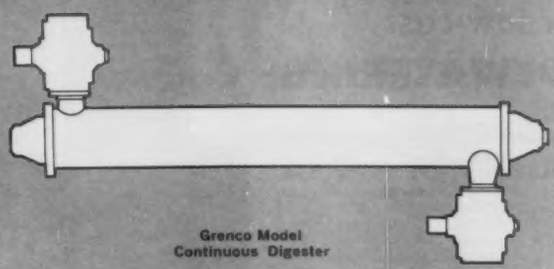
BUTTERFLY • METERING

CHECK • GATE • STOCK



METERING

Rapid Cycle
Batch Cooker



Grenco Model
Continuous Digester

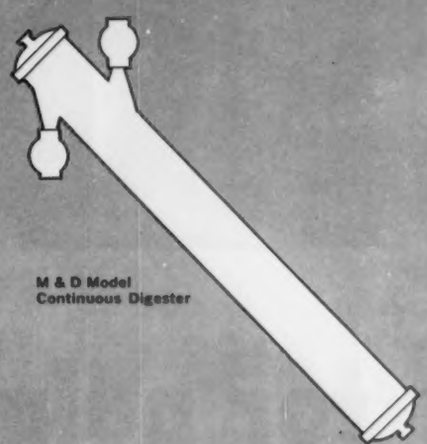
Bauer DIGESTERS

A Complete Line for All Cooking Requirements

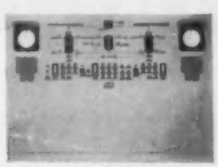
Bauer's modern line of digestion equipment is engineered specifically to help you meet modern market demands.

Featuring automatic operation, accurate control and high efficiency, this equipment includes the Rapid Cycle batch cooker and two types of continuous digesters—the Bauer M & D model and the Bauer-Grenco model. Both continuous models are equipped with the famous Bauer-Grenco rotary valve. Optional electronic controls assure maximum uniformity in any type process.

Bauer is the only supplier that can offer you, on an impartial basis, the type digestion equipment best suited to your particular needs. For more details, ask for Bulletin P-30.



M & D Model
Continuous Digester



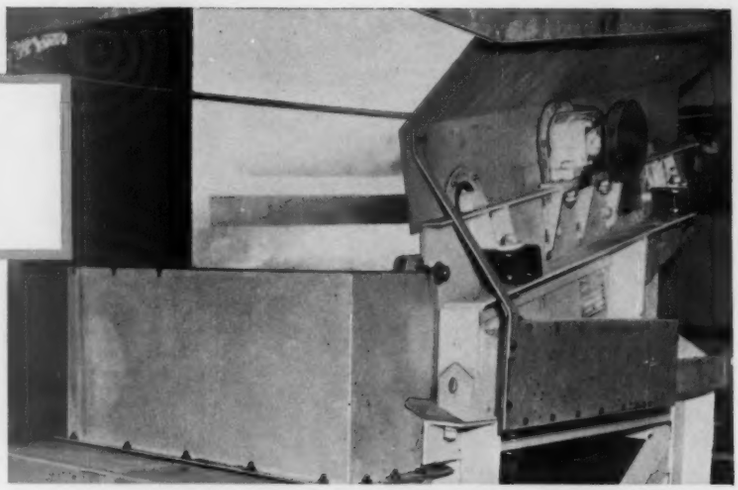
Electronic Controls (Optional)

Grenco Rotary Valve
for Continuous Digesters

THE BAUER BROS. CO.

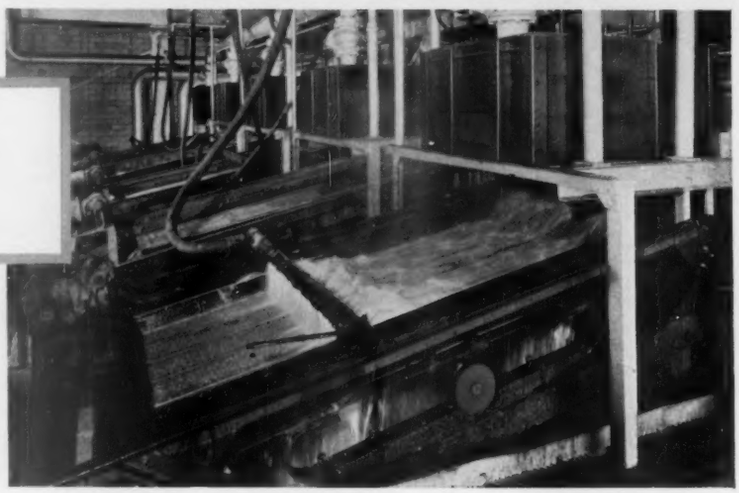
1706 SHERIDAN AVENUE
SPRINGFIELD, OHIO

For low-cost **DEWATERING**



UNION BAG-CAMP PAPER CORP. uses 6 Link-Belt liquid vibrating screens to dewater unwashed and unrefined semi-chemical pulp at its Savannah (Georgia) plant. Each screen consistently processes over 50 tons a day. Dewatering of the neutral sulfite semi-chemical pulp before it is refined cuts horsepower requirements of refiners in half.

For efficient **RECOVERY**



RECLAIMING PULP PARTICLES from large volumes of water is a fast, economical operation with Link-Belt liquid vibrating screens. Five screens at right are recovering pulp from factory white water. Each is equipped with a power-propelled traveling spray. Both dewatered pulp and clarified water are returned to system for re-use.

LINK-BELT liquid screens prove **most profitable for pulp**

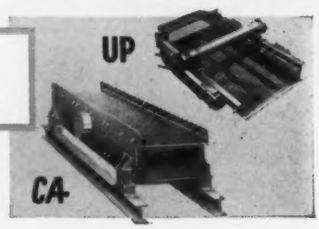
Throughout the paper industry, Link-Belt liquid vibrating screens are helping mills get "extra profits" out of pulp production. They hold dewatering costs to a minimum . . . reclaim salvageable waste quickly and economically . . . enable mills to avoid stream pollution.

Because of a special deck design, Link-Belt liquid vibrating screens can be equipped with very fine screen cloth. This feature, plus the high-frequency, small-amplitude vibration produced by a fully enclosed, self-aligning roller bearing vibrator mechanism, assures maximum solids retention . . . maximum liquid passage.

You can get expert counsel on any screening problem by calling your nearest Link-Belt office. Or write for Book 2777.

14,720

. . . and for thorough CHIP SCREENING



FAST BED STRATIFICATION in high-capacity screening is achieved with Link-Belt "CA" vibrating screens. "UP" screens assure equal efficiency on low-capacity jobs.

LINK-BELT

VIBRATING SCREENS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World.

Unique chemical process, discovered by Staley research, makes possible a new advance in surface sizing and coating

New MIRA-FILM Acetate Gum

The Result of a New Basic Chemical Discovery by Staley

MIRA-FILM Acetate Gum is recommended for sizing and coating all grades of paper where optimum surface characteristics, high strength and excellent film-forming properties are required.

MIRA-FILM Acetate Gum sets new standards in uniformity . . . is non-congealing and stable in viscosity. Has good water retention . . . produces clear, flexible films. Pick tests are improved . . . adhesion in pigment coating is exceptional.

MIRA-FILM Acetate Gum is available in a *complete* range of viscosities. Why not investigate this significant advancement for yourself? Contact your Staley Technical Representative or write:

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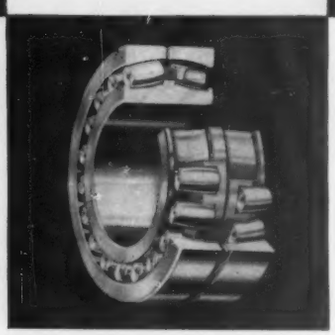
- inherent self-alignment
- conformity of rollers to races
- positive roller guidance
- land-riding bronze cages
- integral flange for stability
- maximum radial and thrust capacity
- extreme precision
- long, smooth service life
- even load distribution



Send for the new Torrington Spherical Roller Bearing Catalog #258

Electronics Matches Rollers and Races for Extreme Accuracy

Torrington employs the latest electronic techniques to insure precise geometric relation between components of Torrington Spherical Roller Bearings.

Roller diameters of a given complement are matched within .0001" of each other. For ultra-precision bearings, tolerances are even closer. Inner and outer races are as rigorously classified. Components are selected for assembly to provide accurate diametrical clearance. The result is bearings of unparalleled accuracy for minimum wear and friction, smooth operation and long service life.

Torrington's care for these details of accuracy is matched only by our care in matching the *right* bearing to the *right* job. In this, you can rely on your Torrington representative and the facilities of Torrington's Engineering Department. **The Torrington Company, South Bend 21, Ind.—and Torrington, Conn.**

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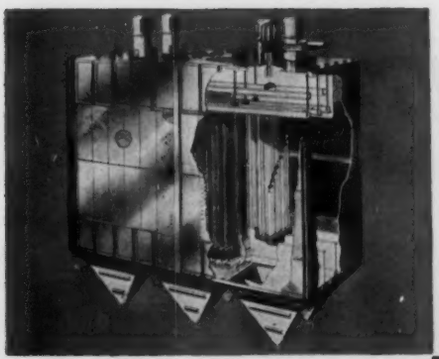
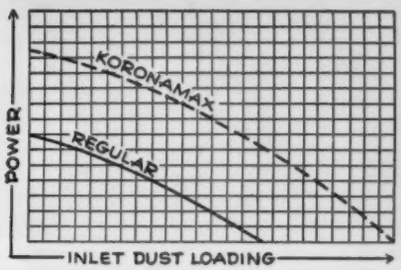
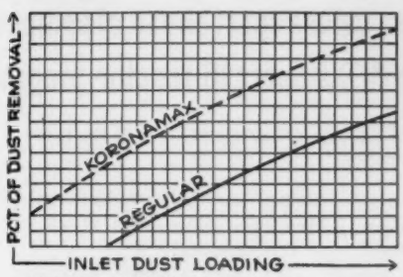


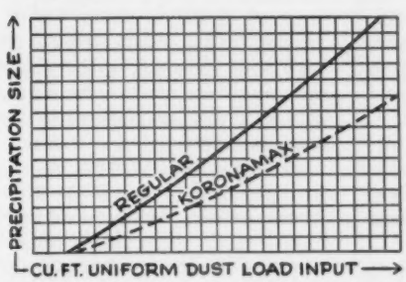
Another Koppers Exclusive in ELECTROSTATIC PRECIPITATION



INCREASED POWER—The evenly spaced discharge points of "Koronamax" Electrodes reduce the arc-over tendency and permit increasing power input.

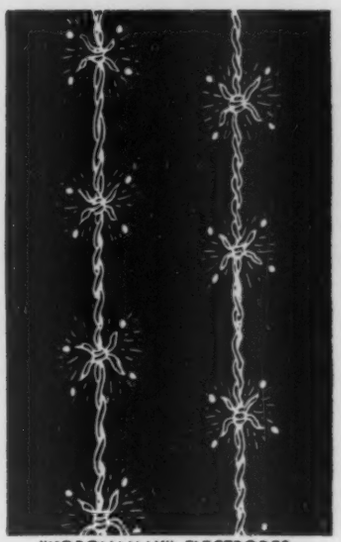


HIGHER EFFICIENCY—Replacement of regular electrodes with "Koronamax" Electrodes allows higher power input — greatly increased efficiency.



SMALLER SIZE—In new installations desired efficiency may be obtained with smaller unit when "Koronamax" Electrodes are used.

CONVENTIONAL ELECTRODES



"KORONAMAX" ELECTRODES

"KORONAMAX" ELECTRODES increase efficiency and capacity of electrostatic precipitators

"Koronamax" Electrodes developed by Koppers are now in service in several different applications and their *controlled* corona discharge has resulted in greatly increased capacity and efficiency. This unique type of precipitator electrode may solve *your* gas cleaning problem.

Koppers' experience, constant research and extensive field testing have led to this important advance in precipitator design. Check with Koppers to see if "Koronamax" Electrodes can help you get top precipitator efficiency. For more information, write: KOPPERS COMPANY, INC., 6908 Scott Street, Baltimore 3, Md.

KOPPERS

ELECTROSTATIC PRECIPITATORS

Engineered Products Sold with *Service*

COOPER ALLOY VALVE BRIEFS

THE VALVE AND FITTINGS ANSWER CORNER

Send in your questions on stainless valves and fittings to Carl Tylka, Cooper Alloy Technical Service Director.

Q. *Is it possible to obtain a valve which, like a globe valve, possesses linear throttling characteristics, but which also, like a gate valve, has low fluid pressure drop across it when fully opened?*

A. Not throughout the entire flow range of the size valve being considered. A very close approximation, however, may be attained with a Flex-Plug type design (a unique new valve patented by Cooper Alloy), which provides linear throttling response up to 90% of full valve flow. The 10% balance of the upper flow region would exhibit a typical gate valve flow pattern.

Q. *How can one prevent oxidation of active ferrite ion on the fluid side of a cast stainless valve body?*

A. This type of corrosion is commonly found on untreated cast stainless surfaces only, and may be caused by foundry, machinery, and handling techniques. Proper pickling and passivation with thorough mechanical cleaning will generally rectify this, though in some cases actual weld repair of the contaminated surface is required. Since this is a surface condition only, machining or grinding will also help.

Q. *What type of valve do you recommend for manual-control services where minimum pressure drop is required?*

A. In the absence of more detailed knowledge of the problem, I would tentatively recommend an angle valve. The pressure-drop characteristics of this type valve are less than 50% those of conventional globe valves.

Q. *Is it advisable to specify installed valve position on an order?*

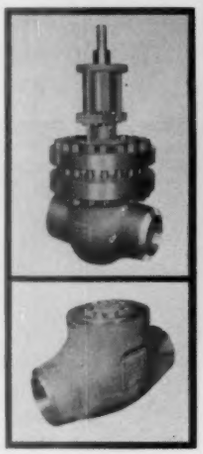
A. Definitely. By inclusion of this information, definite design considerations can be incorporated, especially in cases where backseat leakages are critical and mechanical valve operation is involved.

Q. *Is it advisable to install valves smaller than the accompanying pipe sizes?*

A. Where flow and pressure considerations so permit, it is not only advisable but also economically beneficial.

Q. *Why aren't valve bodies with butt weld end connections made shorter?*

A. To prevent distortion of the seating surfaces during installation. The longer length is required for heat dissipation during welding.



Above left, Cooper Alloy 16" cast stainless gate valve ready to receive gear motor drive; lower left, Cooper Alloy 12" cast check valve. Both are rated for 2500 psi service at 670°F. Official AEC photo above shows them in place in nuclear process line.

Cooper Alloy cast stainless valves spurt ahead of competition to win acceptance in AEC's Spert III reactor program

Cast yield strengths of 23,000 psi, plus cost savings of 40%, do the trick!

This is a Cooper Alloy success story in another "first": casting of stainless valves and fittings to strength levels actually surpassing those previously possible only in forgings—and doing it all at a 40% saving to the customer!

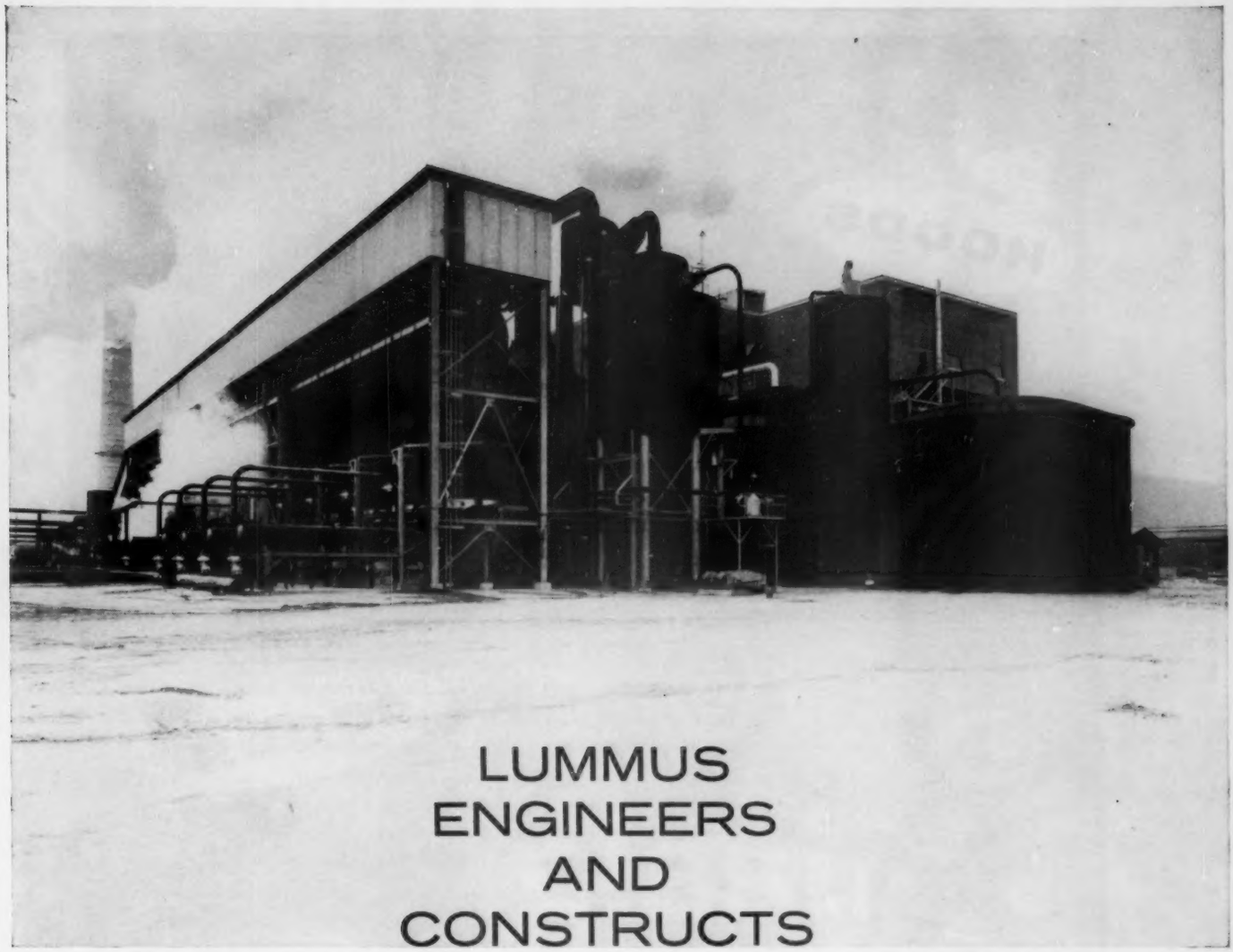
The story starts, naturally, with the AEC's valve and fitting specifications, which are rugged indeed. They have to be certified to function continually at elevated pressures and temperatures (2500 psi, 670° F.), under which conditions leakage, corrosion, and other operational problems are magnified enormously over those encountered in normal process work.

Prior to turning to Cooper Alloy, the contractor for the AEC cancelled a large valve order from another supplier, because the latter could not meet the exacting physical specs without changing the material specs. Cooper Alloy was given the order on the basis of producing to meet AE and AEC specs. Cooper Alloy valves and fittings are currently in operation in the AEC's Spert III installation at Arco, Idaho. Included are nuclear fittings, and motor and manual operated gate, globe, and check valves in various sizes.

How does Cooper Alloy do it? Through the use of the most advanced foundry methods, meticulous attention to conditions, and an exact balance of chemical composition to develop the maximum strength characteristics inherent in the complex structure of stainless alloys. All products, naturally, are elaborately tested and guaranteed before delivery.

As if the AEC's specs were not stringent enough, there is now a bonus to the story: during production, Cooper Alloy technicians worked out ways of producing cast strengths higher than those required, and proceeded to produce all fittings and valves to these higher, self-imposed standards—at cost savings of 40% over forged valves and fittings!

Unusual, yes, but not to Cooper Alloy. It's typical of the quality bonus you get when you buy from Cooper Alloy. For further information, write to Cooper Alloy Corporation, Hillside, N. J.



LUMMUS ENGINEERS AND CONSTRUCTS

Buckeye Cellulose Corporation's Wood Pulp Expansion

NATION'S OLDEST PRODUCER OF CELLULOSE PULP DOUBLES PRODUCTION CAPACITY OF FOLEY, FLORIDA, PLANT. **The Buckeye Cellulose Corporation, America's oldest yet fastest growing cellulose pulp producer, will soon put into operation a new $20,000,000 wood pulp unit at Foley, Florida, thus completing an expansion program which doubles the plant's original production capacity.**

The Lummus Company engineered and constructed the process units for these expanded facilities which assure Buckeye's customers a steady supply of highest quality Southern pine pulp. This new Lummus-designed plant is still another step in the growth of a company with 37 years of experience in producing cellulose pulp. Buckeye has the world's most complete line of celluloses, being the only producer of cellulose from both wood and cotton linters. Its cotton linter pulp mill was established in Memphis, Tennessee, in 1921.

Highest standards of processing are demanded by Buckeye to provide the best in cleanliness, brightness, strength and other specific qualities desired by users of Buckeye pulp. Long a research-minded company, Buckeye spends a higher percentage of sales on research activities than any other pulp producer.

In addition to engineering and constructing the process units for the Foley expansion, Lummus hired and coordinated various subcontractors for other portions of the plant. In spite of the complexity of such a large program, Lummus met the construction schedule and the new mill is assured a smooth start-up.

The Lummus Company has designed, engineered and constructed over 800 complete plants for the process industries throughout the world in the last 50 years. Lummus world-wide experience is at your disposal.

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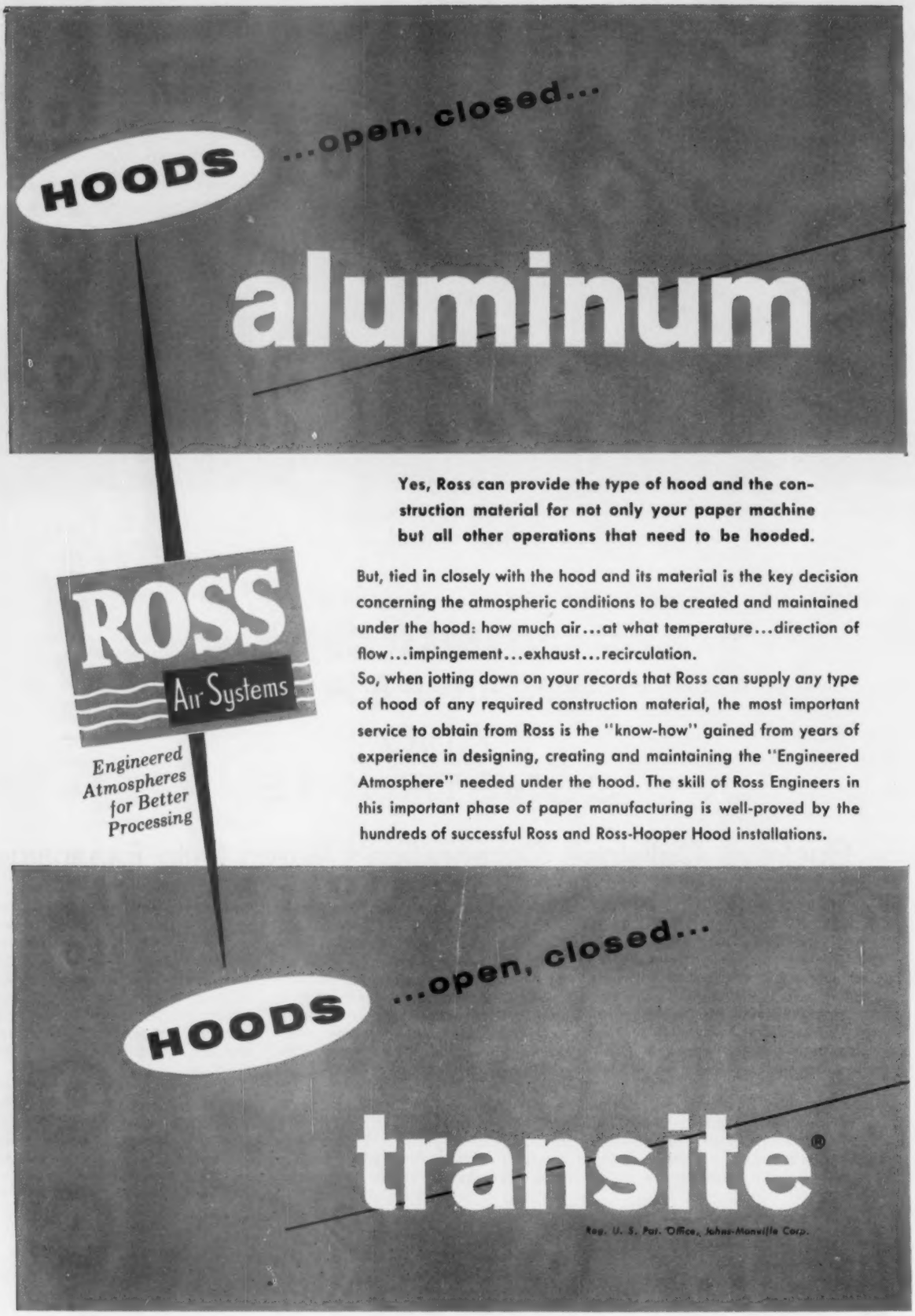
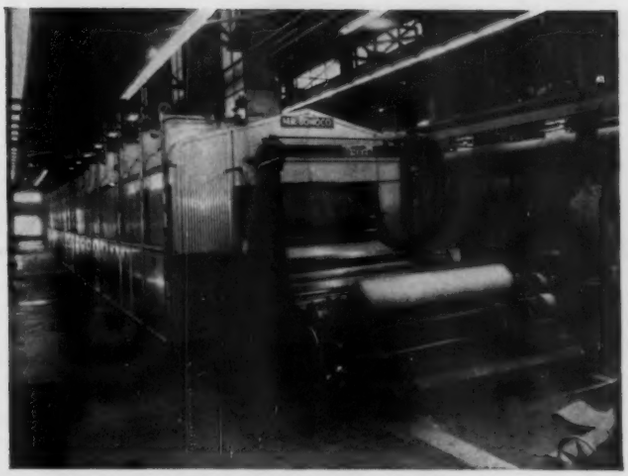


Yes, Ross can provide the type of hood and the construction material for not only your paper machine but all other operations that need to be hooded.

But, tied in closely with the hood and its material is the key decision concerning the atmospheric conditions to be created and maintained under the hood: how much air...at what temperature...direction of flow...impingement...exhaust...recirculation.

So, when jotting down on your records that Ross can supply *any* type of hood of any required construction material, the most important service to obtain from Ross is the "know-how" gained from years of experience in designing, creating and maintaining the "Engineered Atmosphere" needed under the hood. The skill of Ross Engineers in this important phase of paper manufacturing is well-proved by the hundreds of successful Ross and Ross-Hooper Hood installations.



HOODS ...open, closed...

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M-R

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Designed especially for hand[illegible]g [illegible]ulpwood...

JEFF[illegible]EY Type PW

No. 132 combination [illegible] chain

Provides extra metal where the wear is unusually severe—where sand and grit are extra tough on ordinary chain. Jeffrey Type PW combination chain, with its generous flat surface on the return side, lets it slide on smooth runways. No riding on idler sprockets, chief source of wear on chain internally and externally.

Although designed especially for handling pulpwood, the PW chain is equally economical on other conveyor applications for reducing wear. And by eliminating return idler sprockets, the conveyor can be made much more compact; this facilitates loading and saves on supporting structures.

Jeffrey PW chain is interchangeable with regular combination chain of corresponding size, and will operate over the same sprockets and in the same troughs. Your Jeffrey distributor can supply your needs. The Jeffrey Manufacturing Company, 809 North Fourth Street, Columbus 16, Ohio.

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TRANSMISSION MACHINERY...CONTRACT MANUFACTURING

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Double up and Catch up!

ALWAYS SOMETHING MORE YOU CAN DO WITH 'WORKHORSE' AMERICAN CRANES

Whenever there's any kind of lifting, loading or maintenance work to be done in your woodyard, there's never any reason why an American should be standing idly by. With interchangeable fronts and go-anywhere, do-anything maneuverability, American equipment is always ready to step up the production pace.

As on this Southern job, Griffith & Dyal of Mayport, Fla., find it practical and profitable to team fast working American 300 Series Crawler Cranes in the loading of flatcars. One American crane lifts the sling full of 4-ft. logs from truck to flatcar. The other slaps a huge concrete slab against any projecting logs, squaring up the load. Safer, faster loading . . . keeps a steady flow of pulp wood rolling at a more economical clip.

American equipment is expressly designed for time saving duties. American Cranes, from 12½-ton to 400-ton capacities, will help you keep ahead of schedule on all your jobs. For handling the most awkward loads with speed and assurance . . . for longer more efficient service . . . you can always count on the dependability of American cranes.

DERRICKS-HOISTS to 800 tons
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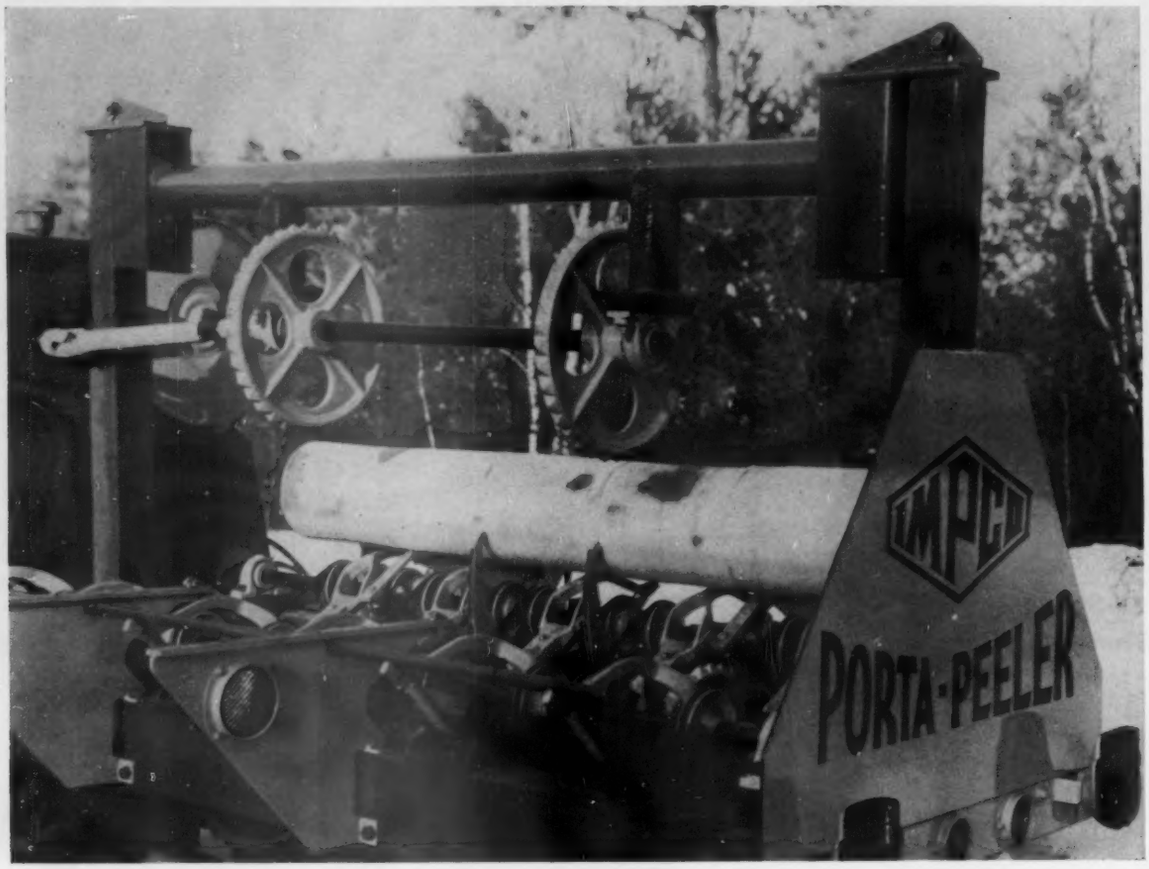
AMERICAN HOIST PACIFIC COMPANY
Special materials handling equipment

CROSBY-LAUGHLIN DIVISION
Drop forged fittings for wire rope-chain

PORTA-PEELED PULPWOOD!



This is the Impco Porta-Peeler in action. Pulpwood contractors and users are receiving it with tremendous interest because of its efficiency and high capacity. Pulpwood suppliers can cleanly bark three to six cords per hour depending on log length. Crooked — knotty — frozen hardwoods — logs up to 26" in diameter? No problem! Porta-Peelers can be completely mobile for wood road operation or permanently installed in wood concentration yards.

IMPCO®

IMPROVED MACHINERY INC.

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7 21 NEW HOMELITE

POWERED FOR PROFIT

- GEAR DRIVE
- 21 POUNDS (less bar and chain)
- GUARANTEED FOR 7 MONTHS
- STRAIGHT BLADES FROM 14" to 60"
- PLUNGE-CUT BOW — 16"

When you cut big timber, it pays to use a chain saw with the ability to do the job quickly and economically. The new Homelite 7-21C with a gear ratio of 2.84 to 1 has plenty of extra lugging power to fell trees up to seven feet in diameter with the speed to cut through 20" trees in 18 seconds.

Its balanced 21 pounds (less bar and chain) makes it easy to carry *to* the job, easy to use *on* the job and safer to handle in any cutting position. Big fuel tank lets you cut longer between refuelings. Homelite manufacturing know-how and quality control reduces maintenance and down-time. More cutting time adds up to greater profits for you.

The Homelite 7-21C has all of the famous Homelite Magic 7 features: tough, drop-forged counterbalanced crankshaft — famous Homelite high compression, short stroke engine design — large air filter — automatic clutch — revolutionary intake valve — simple piston pump oiling with finger-tip controls — automatic governor. Truly your partner for more profit, the new Homelite 7-21C is *guaranteed for a full 7 months!*

Available with a full line of attachments including plunge-cut bow, brush cutter and clearing bar.

Team up for profit with a new Homelite 7-21C. See and try it in a free demonstration at your nearby Homelite dealer's. You can find him in the Yellow Pages of your telephone directory.

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ANOTHER FIRST! All new Homelite bars and bow guides are guaranteed for a full 60 days! Straight blades: Hard Track plus Extra Hard Tip. Bow guides: Extra Hard Surface *all the way around.*

HOW RIEGEL USES CAT DIESEL TRACTORS FOR PROFITABLE SITE PREPARATION

One of two D7s: Pulling a rolling chopper, this D7 equipped with No. 7A Bulldozer covers 17 to 20 acres a day. Riegel gets the same production from its other D7. Riegel also uses its D7s, rated at 128 flywheel horsepower, for road construction.

One of six D6s: Preparing site with a disc harrow, this D6 averages 6 to 8 acres a day. Riegel counts on similar production from its other D6s. Rated at 93 flywheel HP and equipped with No. 6A Bulldozers and winches, these machines also build roads and fire lines.

One of three D4s: Equipped with No. 4A Bulldozers, Riegel's D4s are often employed for light site preparation. Their main duty: fire line work. Rated at 63 flywheel horsepower, they're also used for clearing right of way, like the D4 shown here.

Of the 235,000 acres in its Woodlands Division, Bolton, N. C., the Riegel Paper Company clears and plants 10,000 acres a year with about 9,000,000 pines. The Division, standardizing 100% on Cat-built machines, has 12 in its line-up—two D7s, six D6s, three D4s and a No. 12 Motor Grader. Chief Forester E. S. Thornton says: "We are well satisfied with the tractors and the service we get from our Caterpillar Dealer."

Standardizing on rugged yellow machines has many advantages. Their availability is exceptionally high. They work day after day with a minimum of down time and maintenance. For example, the exclusive Caterpillar oil clutch delivers 2,000 hours without adjustment. Other advantages: operator familiarity with one make of machine means greater production. And there's a big plus in one-stop service, wherever and whenever you need it, from your Caterpillar Dealer. From the D4 (63 flywheel HP) to the take-charge D9 (320 flywheel HP), there's a Cat Diesel Tractor suited for every phase of site preparation.

To help you in your selection, Caterpillar has compiled cost analyses of its tractors in a wide range of jobs—Stump Treatment; Stump Clearing and Tree Cutting; Chaining; Raking and Windrowing; Harrowing; Planting. For further information, write Logging Section, Caterpillar Tractor Co., or call your nearby Caterpillar Dealer.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR

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MODERN HEAVY-DUTY MACHINES FOR PROFITABLE SITE PREPARATION

SOUTHERN HARDWOOD forms a fitting frame for back side of machine room at St. Francisville. Recently developed production methods have turned this wood into a valuable source of pulp for high-quality printing papers.

Delta Forests are Hardwood Bonanza

New Crown Zellerbach coated paper mill at St. Francisville, Louisiana, utilizes once-bothersome hardwoods in its special process

● Thanks to some of the research carried out by Crown Zellerbach's Camas, Wash., laboratory, abundant Delta hardwoods which flourish along the Mississippi waterways and in the bayous of Louisiana and Mississippi are now a cash crop for local farmers.

Once relegated to girdling and death "on the stump" and considered a blight in flush pine stands, cottonwood is the prime source of pulpwood for St. Francisville's groundwood mill. Its pulping characteristics contribute importantly to a smoother, more uniform base sheet for Crown Zellerbach's coated paper.

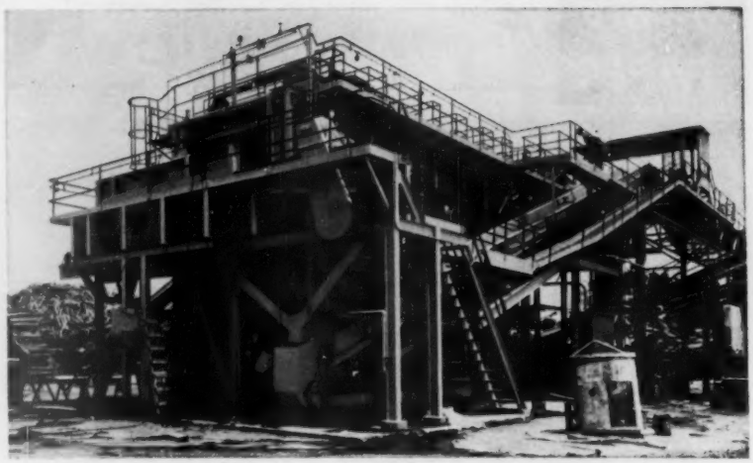
LOGS FOR GRINDING are reclaimed by Link-Belt Speeder crane. Bales of chemical pulp are visible in storage area in background.

Since the mill is located only a mile from the Mississippi River, pulpwood can be delivered to the mill either by barge or by rail. The barge site, already handling shipments of paper up river to Chicago, can also be used to unload river barges laden with hardwoods.

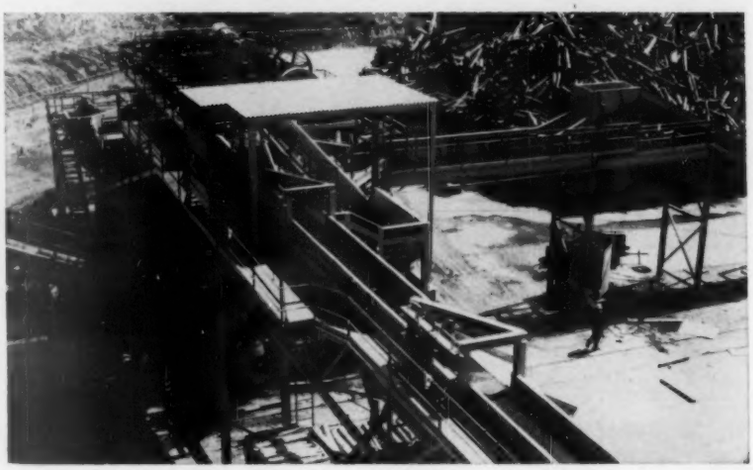
The wood is stored in a woodyard at the end of the mill and is delivered to the 12 by 45 ft. Fibre Making Processes barking drum on a single strand chain conveyor designed and built by James Brinkley of Seattle, Wash. Link-Belt Speeder cranes are used to move wood from flatcars and woodpiles onto the conveyor. The logs are dropped on a 5-ft. wide rubber belt which delivers them at 90 degrees into the drum. At the other end debarked logs drop on a similar rubber belt which is also 90 degrees to the outfall of the drum. They are then carried past an operator's station where they can be rejected and returned through the drum, kicked off the conveyor into barked log storage or dropped onto a chain conveyor for delivery directly to the groundwood mill.

Most of the chemical pulp used at St. Francisville is being furnished by other Crown Zellerbach mills. However, the corporation holds an option on a millside at DeRidder, La., less than 100 miles from St. Francisville, where it has announced plans for possible construction of a pulp mill.

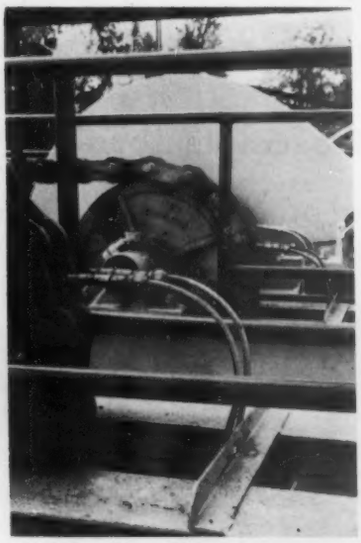
Crown Zellerbach has over two million acres of timberlands and operates 23 tree farms throughout the United States.



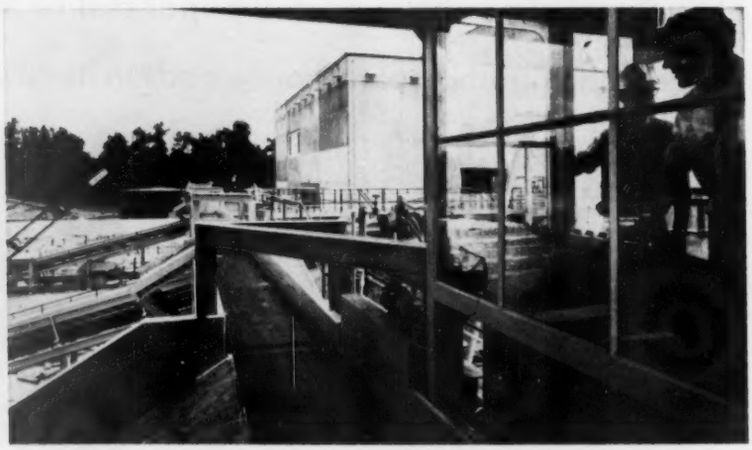
DESIGNED TO HANDLE FULL LOAD of pulpwood for the groundwood mill, this 12x45-ft. Fibre Making Processes barking drum is the vortex of the woodyard's activity.



PART OF INTRICATE BRINKLEY CONVEYOR system is shown in overhead shot of drum. Logs are delivered at right, can be kicked off conveyor at three different points after leaving drum. First chute returns them to drum.



SPECIAL CZ-DESIGNED SYSTEM is used to lubricate the driving chains on the heavy steel barking drum. Picture shows nozzles which sprays oil into joints.



CLOSE UP OF CONVEYORS shows pneumatically operated control station at right. Operator has several options: send logs to grinder in groundwood mill; return them to drum barker; send to debarked storage; or reject them.

Progress via Woods Research

Continued and expanding research offers the forest industry its best opportunity to successfully combat (1) the inroads of competing materials, (2) the rising costs of production and (3) other adverse factors of recent development.

This view was expressed recently by Dr. J. A. F. Gardner, head of the Wood Chemistry section at the Vancouver, B.C. laboratory of Forest Products Laboratories of Canada. Addressing a trade and industry conference, Dr. Gardner stated that if necessary changes and improvements in harvesting and manufacturing techniques are brought about through adequate planning, research and development, there is little doubt that the forest industry will maintain its important position in Canada's economy.

"Contrary to public opinion," the speaker declared, "the sheer size of a research operation is not necessarily a major factor in its success." It is often the case, he advised, that "market analysis and one or two trained research workers can create important new industries."

He cited as an example a three-year-old plant in the Vancouver area now producing a drilling mud additive from hemlock bark extracts (Alaska Pine & Cellulose Ltd.). The potential use for this product was first indicated 10 years ago by chemists at the Vancouver laboratory.

Douglas fir now accounts for about 40% of the cut in British Columbia—both in the interior and on the coast. At this rate, Dr. Gardner warned, mature fir might last eight years on the coast and 24 years in the interior. Unknown factors make a close estimate almost impossible. Nevertheless, he declared, it is obvious that greater relative use will have to be made of other species.

Research has already played a key part in the development of new techniques in both the woods and the mills. It was responsible for hydraulic barkers and whole-log chippers; the manufacture of kraft pulp from Douglas fir; the introduction of pre-logging and relogging; the use of salvage wood for pulp; the use of portable spar trees and mechanical loading devices unheard of 20 years ago (such as self-dumping log barges), and the manufacture of plywood through application of radio frequency bonding.

The field is yet wide open for further research, Dr. Gardner concluded, and intensive study is now underway in many fields: the production of plywood from western woods other than fir; the redesign of saws and planers to produce usable sawdust and shavings; continuous pulping equipment to make possible the utilization of sawmill residues now wasted; the upgrading of lumber through surface modification with paper and plastics; new edge and end gluing techniques; the chemical modification of wood to impart greater stability, and the development of water extract of cedar mill residue in the electrolytic refining of lead.

Pulp Chip Source Also Reduces Wood Waste

Pulp chips produced as a by-product of processing rough lumber into finished boards has been achieved on the Pacific Coast. This significant advancement toward fuller economical wood utilization took place recently at the Somass sawmill of MacMillan & Bloedel, Ltd. in Port Alberni, B.C., where the firm has a large integrated forest products manufacturing center.

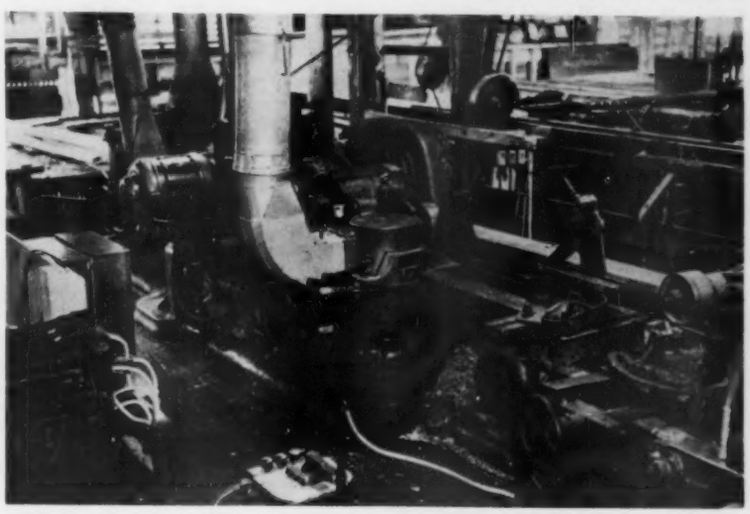
Although the machine making this possible was developed only after three years of engineering and testing, the MacMillan & Bloedel unit was the first to operate on a commercial basis in the industry. Because of its potentials, the performance is being observed with interest by both pulp men and sawmill operators.

In the normal planing process at most mills, despite advances in sawing practices, as much as 20% of rough green dimension lumber is often converted into shavings. In this form the residue wood removed in the process is suitable only for low-value usage, such as fuel, or it actually presents a disposal problem. At present log prices, any move towards economic recovery of the residue material in a form adaptable to utilization at higher value provides opportunities of lowering the cost of materials, increases the "mileage" from each 1,000 bf of timber, and offers opportunities for increasing forest-industry earnings.

This removal of wood from rough lumber in the form of pulp chips is accomplished by installing and operating one or more special chipper heads —developed by Stetson-Ross Machine Co., Seattle, Wash. These heads, containing 3, 4 or 6 knives each, are used in conjunction with an otherwise conventional planer-matcher and operate as blankers ahead of the planer-matcher heads.

The length and width of pieces removed by the blanking units are controllable to yield pulp chip sizes.

The original chipperhead installation at MacMillan & Bloedel consisted of a side head only. In surfacing 205,000 lineal feet of 2x6 lumber this single component produced 10.1 units of pulp chips. The chip-blankers are available as top, bottom side heads.



CHIP-BLANKER (indicated by arrow), operating in conjunction with planer for surfacing boards, removes excess wood from edge of 2 in. lumber as pulp chips at rate of .05 units per 1,000 lineal feet. Considerable increase in chip yield is achieved by adding top and bottom heads.

FROM MASTER CONTROL ROOM at Howard Smith Paper Mills, Cornwall, Ontario operator gets clear view of woodyard.

FARMERS UNLOAD their own wood at the woodyard into one of two main ponds. Four auxiliary ponds are used for supersurges. The six ponds can handle about 1,000 cords/day.

Hardwood Handling Made Easy

New woodyard design eases supersurges in trucked wood, enables continuous woodroom operation and features outside chip storage

• In its hardwood handling system at Cornwall, Ont., Howard Smith Paper Mills Ltd., was plagued with this problem.

Tremendous surges in farmer-trucked wood arriving at the mill woodyard resulted in long waiting lines and short tempers. In building its new woodyard and woodroom, Howard Smith has eliminated this bottleneck and added two new features.

1—Continuous woodroom operation geared to the speed of the hoist (about 60 cords/hour) and

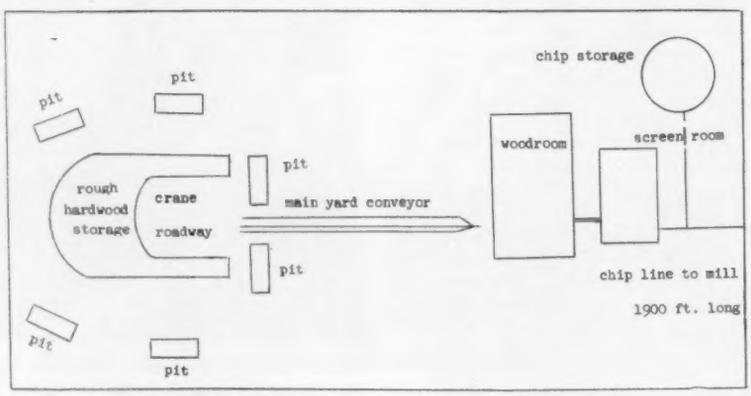
2—Outside chip storage, probably the first in Eastern Canada.

In redesigning its hardwood handling techniques, Howard Smith aimed at minimizing wood handling. As every woodyard manager and cost accountant knows, every time you touch a stick of wood, it costs money.

In the new system (see sketch), 6 water ponds (25-ft. wide, 100 to 125-ft. long and about 14-ft. deep with steel sheet piling aprons) are arranged in a U-shape around a single crane. Farmers unload their own wood into the two ponds (Nos. 1 and 6) which are next to the woodroom conveyor. These two ponds handle normal deliveries; the other four are used for supersurges. The six ponds can handle about 1,000 cords/day.

Oversize wood is kept separate on the truck and is sorted as it comes in. Howard Smith aims to keep all wood 20-in. and over from the pond.

The Lorain crane with a 90-ft. boom and an orange peel grapple, feeds the double chain conveyor to the



NEW IDEA IN WOODYARDS uses water-filled pits in U-shape around single crane which services pits, temporary storage and main yard conveyor to barkers.

OUTSIDE CHIP STORAGE such as the pile in the foreground is a new feature at Howard Smith's Cornwall Div., probably the first mill in Eastern Canada to employ this method. Painter in background touches up supports for the inclined ramp which carries chips to screen room.

woodroom and can comfortably handle about 60 cords/hour, which is the capacity of the chipper.

Inasmuch as the woodroom chips faster than the mill's capacity to use, surplus chips are stored outside, and are recovered with Payloader at night and on weekends. Chips are stored in two piles with a total capacity of 10,000 cords.

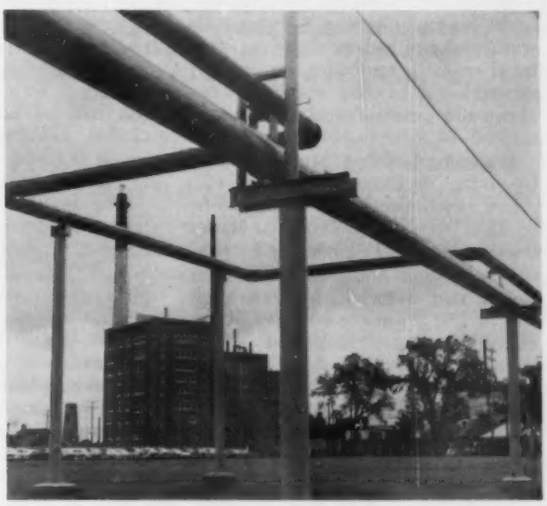
A reclaiming chain conveyor runs between the two chip piles. Over the conveyor is a walkway on which runs the pipe which carries chips to the pile. This pipe is equipped with quick couplings, so that an elbow may be inserted at any point and the chips diverted to any part of the pile.

A Payloader is used to reclaim the chips, which are screened and then blown to the mill. It is proposed to operate the woodyard and woodrooms which are on a five-day, two-shift schedule, with chips being recovered from the pile at nights and on weekends.

From a master control room on the top floor of the woodroom, the operator has a clear view of the woodyard and the conveyors feeding the drum barkers.

The woodroom is actually two separate buildings to facilitate expansion if needed. In the first building are the two drum barkers, chipper, dewatering screens for bark. Chips move to the second building for screening along a belt conveyor. This building also has the two Rader Pneumatic units for blowing chips through an 16-in. o. d. line to outside storage, or through the 18-in., o. d., 1800-ft.

CHIPS ARE INSPECTED as they pass through covered passageway from barking-chipping building to screening building. The woodroom is in two buildings to facilitate expansion.

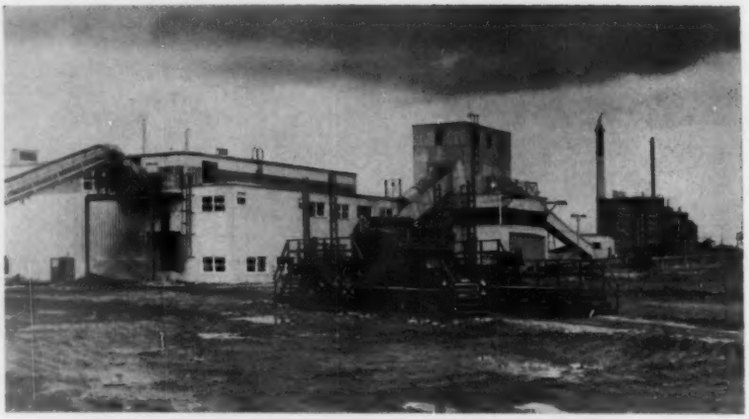


CHIPS ARE BLOWN at 90 mph through 1800 ft. of 18-in. o. d. pipeline to the mill or through a 16-in. o. d. to storage piles. Framed in the background is the mill's recovery plant.

long pipeline at 90 mph to the mill.

Interesting Features of Woodroom

Impact idlers are used at all loading areas on the rubber belt conveyors. Three hot water lines run into the feed end of the drum barkers for frozen wood. A 20-in wide rubber belt feeds the chipper spout, eliminates a man at the chipper. Ceiling lights can be lowered for changing bulbs. Resolite glass, green-tinted, provides economical daylight without breaking the wall patterns.



GENERAL VIEW OF HOWARD SMITH PAPER MILLS shows the scaling ramp in foreground; behind are the two woodroom buildings; and at far right boiler recovery plant.

Wood Handling System, Principal Equipment

Woodyard: Six unloading ponds, two main and four auxiliary. Ponds emptied by a Lorrain crane, size 85A with a 90-ft. boom. Pulpwood moved to woodroom by a double chain conveyor.

Woodroom: Dimensions are 76-ft. by 116-ft. Two Ingersoll-Rand (Sherbrooke) 12-ft. by 45-ft. Weldrum barking drums. First section is solid, second is open. Average barking capacity is about 20 cords an hour. Each drum is operated by a 150 hp motor.

Chipper: One 15-knife Carthage Norman chipper powered by 700 hp Tamper motor. Takes logs up to 22-in. dia. with capacity about 70 cords an hour.

Woodroom building also contains scalers' office in northwest corner with washroom and lockers above; an electrical room in southwest corner with superintendent's office and lunchroom above and a control room on the north side.

Screening Building: Measures 36-ft. by 40-ft., has three storage bins with rotary vane feeders; two Ty-Rock 5-ft. by 12-ft. screens. Also contains Rader Pneumatics and Engineering air conveyor blowing equipment. This includes two Sutorbilt blowers, each with a 250 hp motor and two 30 by 45 feeders. One discharges into an 18-in. o.d. line to blow chips 1,800 ft. to the mill; the other discharges into a 16-in. o.d. line to outside chip storage. Chips can be reclaimed from storage, screened and blown to the mill.

Conveyors: Chain Belt: 1 from ponds, 3 from woodroom, 2 in screening building and 1 in reclaiming. United Steel: drum feed conveyors, sorting conveyor, recirculating and chipper feed conveyors. Forano Ltd: chip belt, bark and chip reclaiming conveyors.

Services installed include: 6-in. steam line from mill for heating. A 10-in. hot water line; a 14-in. combined fresh water and fire line and a 42-in. sewer line.

Crown Z Reforested Area

During the recent planting season Crown Zellerbach Corporation planted and seeded 5,604 acres of its tree farm forest in the western part of Oregon and Washington. This included hand planting of 1,756,150 two-year seedlings on 3,406 acres and seeding 2,198 acres—30 acres by hand the rest by helicopter. Species included Douglas fir, Sitka spruce, grand fir, noble fir, silver fir, Monterey pine and cottonwood.

The timber department reports it has restored forest growth on 55,000 acres of its northwest tree farms since World War II. This includes the planting of over 17 million seedlings.

Most of the company's planting stock is grown from specially selected seed collected on CZ tree farms. This seed, which is de-winged and cleaned at the company's Vernonia, Ore. seed processing headquarters, is planted in the forest industries' Col. W. B. Greeley Nursery at Nisqually, Wash. to be grown as two-year seedlings to be used in the hand planting projects. Some of the seed is stored in a Vernonia cold storage vault for future aerial and hand feeding use.

Progress in Chemical Control of Forest Land Brush

Significant progress in chemical control of brush and weed trees on Willamette Valley foothill forest lands has been reported by the Oregon State College school of forestry.

Brush and weed tree encroachment on forest lands is greatly reducing the amount of wood grown in Northwest forests, surveys show. It is estimated that brush has reduced the productivity of more than one-fourth of the forest land of Southwest Oregon.

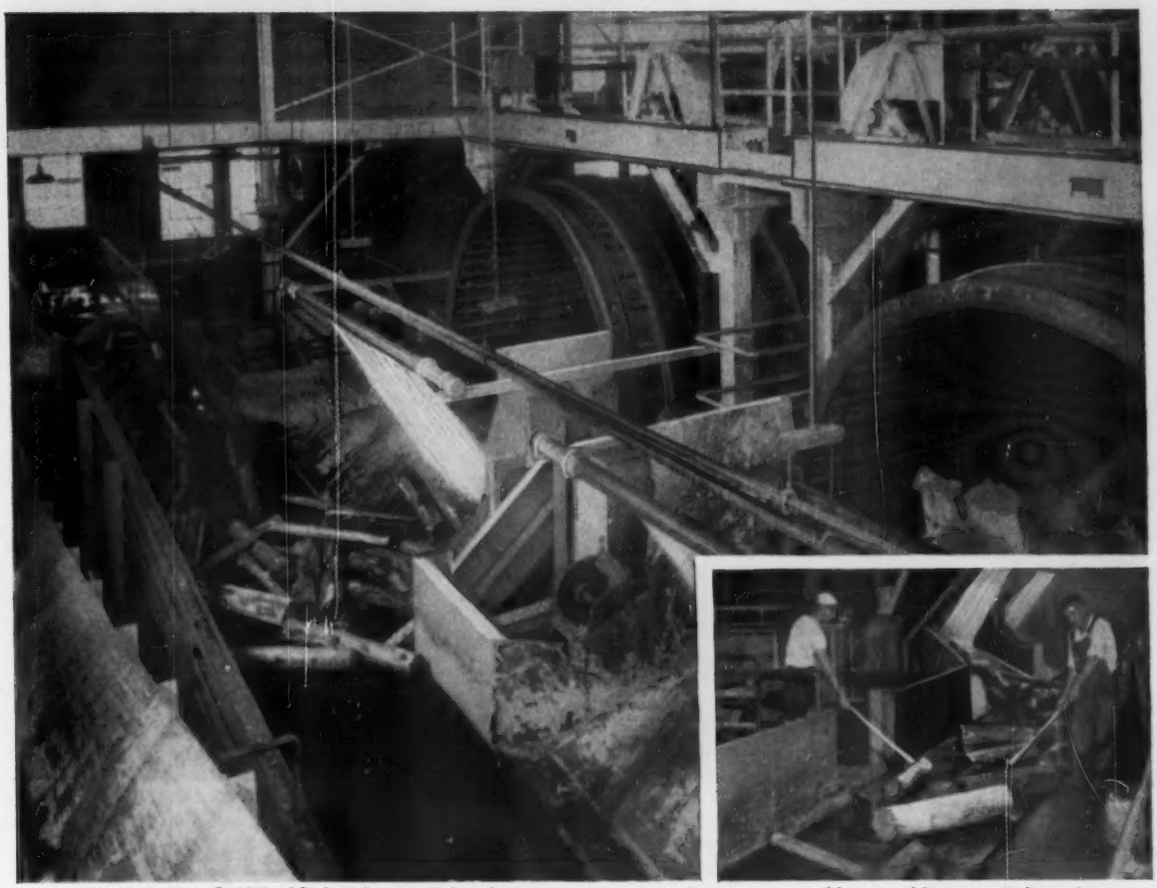
In the OSC field tests, effective kills were achieved with 2(2,4,5-TP) on big-leaf maple, white oak, and thimbleberry, blackberry and poison oak. Bigleaf maple and white oak are considered weed species although both produce useable wood. The market for them is limited and a considerably larger volume of coniferous wood can generally be produced on the same land.

Hobart B. Jones, now a forester with the Bureau of Land Management in Medford, Ore., worked on the project during the past two years while doing advanced study at Oregon State College. Dr. George Barnes, assistant director of the forest research division at the college, is in charge of the chemical control research program.

Chemical brush control as a forest management tool is a comparatively recent development, but shows great promise with continued research on new chemicals, application and plant reactions.

US RUBBER Conveyor Belts

Logging a new record!



This U. S. Giant® 60" wide Log Sorting Belt is built to withstand the heavy impact of logs tumbling onto it from the debarking drums (left) and to resist the sharp points of the pickaroons which the men use to sort out rejects (right).

When the Mosinee Paper Mill Company, Mosinee, Wisconsin, required a conveyor system to step up production of wood and pulp, they turned to the company that had helped with the same problem on many installations in the United States and Canada—U. S. Rubber.

"U.S." engineers studied the requirements, the mill layout, and—above all, the problem of costs. Eight "U.S." conveyor belts were installed, made endless on the job. Production went up to a new record for the log-sorting operation of Mosinee Mills.

The easiest and most economical way to increase haulage and to lower costs is to enlist the services of United States Rubber conveyor belt engineers. Their wide and varied experience in materials handling for the wood products industry allows them to give you the very best help obtainable.

• • •

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US RUBBER Mechanical Goods Division

United States Rubber

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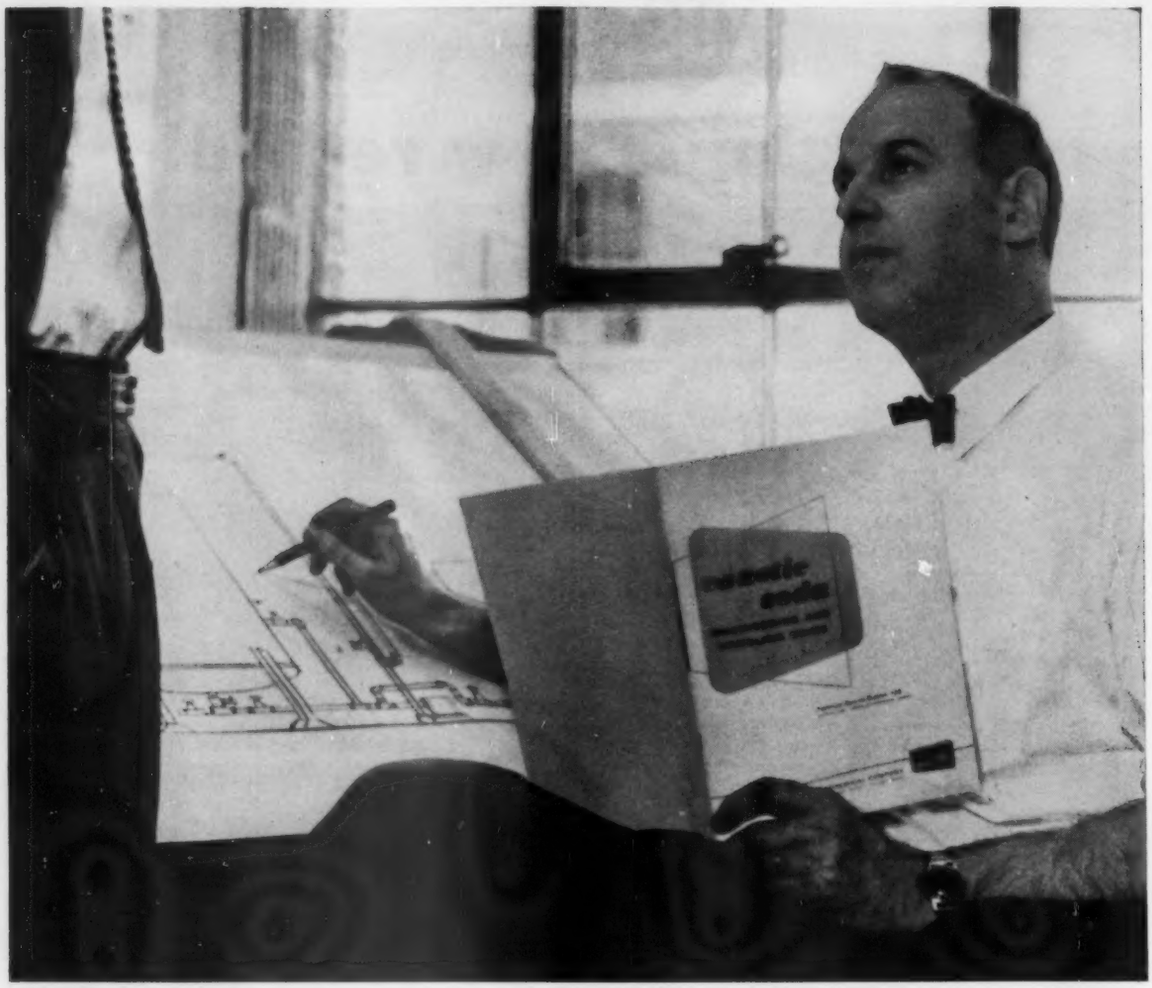

This HOOKER MANUAL helps you store and handle caustic soda safely

This new manual gives you 40 pages of information and advice on how to handle and store liquid caustic soda safely, efficiently, and with minimum risk of contamination.

Here are some of the contents:

- ✓ Large, detailed diagrams of equipment to use in unloading, diluting and storing.
- ✓ Commonly used methods for unloading a tank car of liquid caustic soda, for diluting to different strengths, and for storing.
- ✓ A section on safety precautions and first aid.
- ✓ A section on materials of construction.
- ✓ 18 charts, graphs and tables to help you predict and control the behavior of liquid caustic under a wide range of operating conditions. These cover such properties as dilution temperature, vapor pressure, viscosity, specific heat, etc.

For your copy of this new manual, write us today or use the coupon.

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Please send me a copy of Bulletin 102, *Caustic Soda Engineering and Handling Guide.*

NAME.....

TITLE.....

COMPANY.....

STREET.....

CITY..... STATE.....

Strictly Personal

Southern

CHARLES H. ROBERTSON, vice pres. of Albemarle Paper Mfg. Co.; H. WATKINS ELLERSON JR., a vice pres. of Halifax, and S. BUFORD SCOTT of a Richmond, Va., investment securities firm have been named members of the board of directors at Albemarle. . . . H. D. (BILL) SHEESLEY, an experienced papermaker with sales and service experience, has been appointed sales representative for Atlanta Wire Works Inc. at College Park, Atlanta suburb. The plant manufactures wires for Fourdriniers.

Four men have earned promotions at Riegel Paper Corp., Acme, N.C.: THOMAS R. JOHNSON is now quality control supervisor and HYTON BABSON is his asst. JOSEPH B. CALLAN has been promoted to finishing and shipping supt., and RUSSELL J. CARPENTER is his asst. . . . STEWART BONNER, Navy air force veteran of World War II, has replaced RUSS KILLINA as tour foreman at Gulf States Paper Corp.'s pulp mill in Tuscaloosa. Russ has retired due to ill health. Also at Gulf States, JIM (SANDY) OWENS, son of Gulf States chief forester J. W. OWENS JR., has been one of three Tuscaloosa high school students chosen as representatives to American Legion-sponsored Boys State meeting at the Univ. of Ala.

R. H. STEVENS has retired from the Herty Foundation in Savannah, Ga. His new address is PO Box 211, Ridgecrest, N.C. A 42-year veteran of the pulp and paper industry, Mr. Stevens served as an advisor to Herty and other clients, will continue on a limited basis.

The Southern Exposure: CHARLIE JACOB, who served as power supt. for Technica Cubana at Cardenas, Cuba, has returned to his former position as asst. power supt. for Bowaters Southern. He was on 90 days leave of absence. . . . LYNN WALLACE, former editor of Bowaters' monthly magazine *The Arrow* has resigned to become public relations director for Tennessee Products & Chemical Corp. . . . JOSEPH R. HAHN, sales veteran with the Masonite Corp. for the past 12 years, has been appointed sales mgr. of the Bowater Board Co., outlet for Bowaters' new board mill at Catawba, S.C. It is expected to be in production by early 1960.

VINCE ZWINAK, mgr. of Gulf States Paper Corp.'s traffic dept. at Tuscaloosa, Ala., recently was honored for 35 years service with the company. . . . O. R. GIBBONS, formerly a sales mgr. for Continental Can Co., has been appointed product mgr. of cartons for the packaging div. of Olin Mathieson Chemical Corp. at West Monroe, La. Olin recently announced opening of its new carton plant here, including a six-color offset and rotogravure press. . . . A. J. (STEVE) ANDRE, dist. sales mgr. for E. F. Houghton Co., process chemicals manufacturers, has moved from Charlotte, N.C., to Houghton's new plant in Carrollton, Ga.

FRANK ELSER, southeastern rep. for E. D. Jones & Sons, has announced the plans for a gigantic fishing party during the Southern and Southeastern Supts. meeting at Gulfport, Miss. There'll be prizes for men and women, box lunch, all bait furnished for the usual $6. . . . Rome Kraft Co. has announced that JAMES A. WHELAN is now mgr. of production and E. V. MCSWINEY is asst. vice pres. JIM WHELAN has been gen. supt. and Mr. McSwiney has been comptroller. . . . CHARLES C. CAYCE has been named to the recently created post of southern regional mgr. of the General Dyestuff Co., Charlotte, N.C. He is a graduate of Georgia Tech.

Wielding "Gold" Spikes on Hospitality Days

Top management officials of American Can Co. send a "gold" log up the conveyor to signal the start of Marathon Southern Corp.'s "hospitality days," during which the company entertained more than 1,800 visitors at its Naheola, Ala. mill. the official start-up of the mill that has been in actual production a few months. Doing the honors: (l to r) WILLIAM C. STOLK, president of American can; ROY J. SUND, vice pres. and gen. mgr. of Marathon and JOHN SPALDING, plant mgr.

LLOYD MERWIN SR., vice pres. of the Gaylord Container Div. of Crown Zellerbach, has announced promotion of DONALD SPAIN to staff engineer for Crown Zellerbach serving Atlanta and Florida. Mr. Spain will operate out of Atlanta. He comes from Gaylord's St. Louis head-

Moore ..... Brown

Collins ..... Jones

Key Changes at Crossett

. . . have been brought about by a reorganization of responsibilities in both sales and production. The new appointments were announced by J. C. HAIR, mgr. of Crossett Co.'s Crossett Paper Mills div.

A Production dept. has been created along the lines of the existing Sales and Office depts. A. B. MOORE JR. has been promoted to the new position of division production mgr. For the past three years he has been production mgr. of the bleached food board mill and prior to that was asst. to the vice pres. and gen. mgr. of Crossett Co. Filling two new mill mgr. positions are C. L. BROWN and ROBERT E. COLLINS. Mr. Brown, formerly asst. production mgr. of the kraft mill, heads the operation of the kraft pulp and paper plant; while Mr. Collins, formerly supt. of the bleached food board pulp mill, is now in charge of the food board pulp and paper mill. EARL JONES, asst. pulp mill supt., succeeds Mr. Collins, and C. H. DUNN remains as supt. of the food board paper mill.

The Sales dept. has been reorganized to the extent of creating two new positions for area sales managers. J. W. TAYLOR, a representative in the New York, N. Y. office, becomes eastern sales mgr.; and DON HODGE, in the Baltimore office for more than two years, becomes a western sales mgr.

Strictly Personal

quarters, where he has been a staff engineer since 1957. . . . ROBERT L. BERWICN is now sales engineer for the PVC Plastics div. of A. M. Byers Co. in Atlanta, Ga. Mr. Berwick was previously with the Byers Co.'s steel sales dept. in Pittsburgh, Pa. . . . FORREST JOHNSON has been appointed to asst. res. engineer at the Rayonier Inc. mill in Jesup, Ga. In his new job Mr. Johnson will concentrate on design work. A graduate of Louisiana Tech. and a native of Camden, Ark., Mr. Johnson has been with Rayonier since 1955.

JEFF SELLERS JR. has joined the staff of the Gulf States Paper Corp. at Demopolis, Ala., as a design engineer. A graduate of Alabama Polytechnic Institute, he was formerly with International Paper Co. at Mobile, Ala. and Pine Bluff, Ark. . . . At Chesapeake Corp. in West Point, Va., E. L. (NED) DOZIER has been promoted to gen. manufacturing supt. STAN J. RYCZAK is now pulp mill supt.—William F. Diehl.

Miles Named Vice Pres.

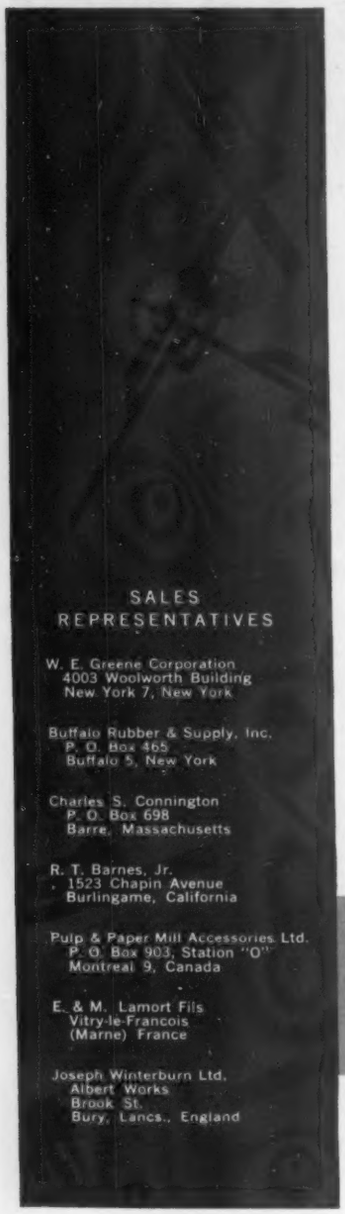
R. VANCE MILES JR., mgr. of Gulf States Paper Corp.'s Forestry div. since it was started in 1949, has been elected vice pres. of the company.

Forms Own Company

ROBERT E. (BOB) ENGLEY, a veteran of 12 years with Walworth Co., has resigned as southern sales mgr. to form his own company. Mr. Engley plans to discuss possible representation with equipment manufacturers who are interested in the southern market. Long-range plans call for eventually offering sales engineering services to clients. Temporary office location is 306 East Kenilworth Cir., Stone Mountain, Ga. (Atlanta suburb). Phone: St. Mt. 8673.

Midwest

GEORGE ROYAN has been named to the newly created position of plant supt. at the Appleton (Wis.) div. of Consolidated Water Power & Paper Co. He was formerly Appleton plant engineer. . . . HENRY G. NELSON, quality supervisor of the shipping container research laboratory in Owens-Illinois Glass Co.'s Glass Container div., has been named coordinator of quality control for the Paper Products div. Active in several TAPPI committees, he is currently heading a special study on "flat crush" of corrugated board. . . . Diamond Gardner Corp. reports two changes in industrial engineering: A. T. TSENG has transferred from the Gardner div. to become director of industrial engineering for the Molded Packaging div. JAMES P. CARPENTER has been named Gardner div. chief industrial engineer. LAWRENCE L. ELLIS has joined Diamond Gardner Corp. as vice president and comptroller of the company's Molded-Packaging Division.



There's more to a Lodding Doctor than meets the eye

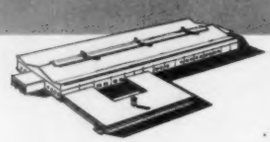
Few qualifications for manufacturing count more than experience. And when experience has been concentrated within a specialized line of endeavor it adds value to the product.

Lodding Doctors carry that extra value derived from experience — experience accumulated over thirty years of specialization in the manufacture of doctors, doctor blades, blade holders and their accessories. During this period, Lodding has built and installed doctors for every conceivable doctoring application, under all conditions and of every type and size, up to and including the Great Lakes Paper Company's 340 inch newsprint machine.

Installations of Lodding Doctors are found in nearly every paper mill in this country and in many mills abroad. Each was precision engineered and precision manufactured for the specific roll being doctored.

Doesn't it make sense to rely on specialized experience? Most mills have found that it does. Next time, get Lodding Doctors. Then you'll profit too.

LODDING
Engineering Corporation
AUBURN, MASSACHUSETTS



JAMES S. BENTON, converting papers sales mgr. for Champion Paper & Fibre Co., has been elected a director of the National Paperboard Assn. . . . C. CONRAD THIEL, works mgr. at South Gate, Cal., has been named gen. production mgr. for United States Gypsum Co.'s Paper, Roofing, Insulation and Metal divs. . . . JOSEPH A. DONAHUE, formerly a consultant in LaSalle, Ill., becomes mgr. of sales promotion for Crane Co., Chicago. . . . ROBERT H. WACKE, community relations mgr. for Owens-Illinois Glass Co. since 1954, has been named communications mgr. for the Paper Products div. . . . E. A. JOHNSTON, treas. of Minnesota & Ontario Paper Co. since 1955, died recently after a short illness.

KARL JOHNSON, for the past eight years associated with Crane Co. in St. Louis, is now representing Jamesbury Corp., Worcester, Mass., in the St. Louis-Kansas City area. . . . DONALD HANLON has been made gen. mgr. of Sefton Fibre Can Co.'s St. Louis plant.

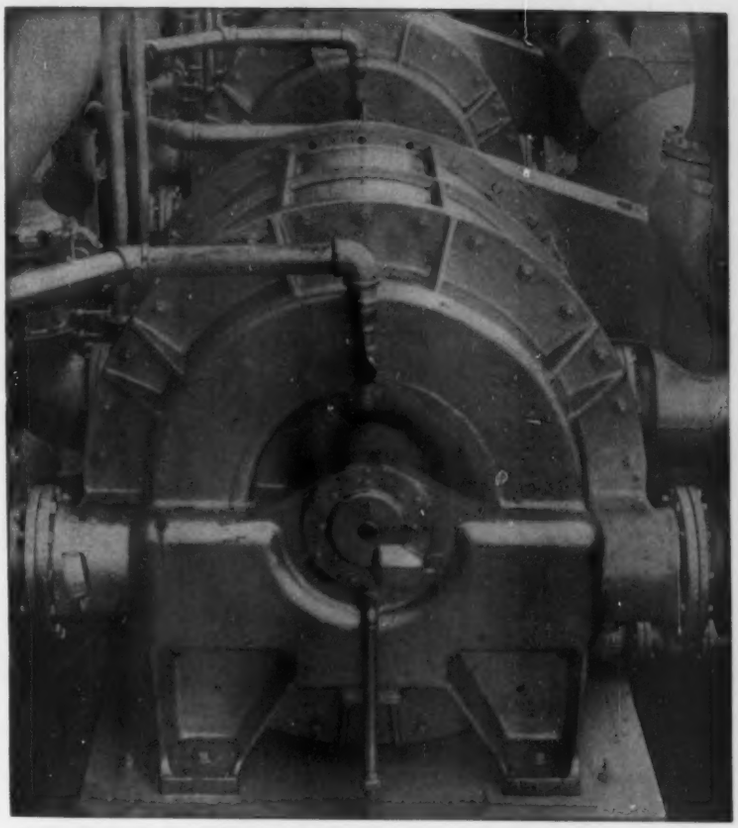
Allis-Chalmers Mfg. Co.'s acquisition of Tractomotive Corp., Deerfield, Ill., has been completed following approval of the Tractomotive board of directors. . . . ELMER R. TIEBERMAN, 58, retired sales executive for Lunkenheimer Co., Cincinnati, died June 24. . . . WESLEY A. SONGER, at one time on the president's staff at General Electric Co., has been elected executive vice pres. of Crane Co., Chicago. . . . Three men have been promoted at the Wisconsin Rapids (Wis.) div. of Consolidated Water Power & Paper Co.: JACK CHINN, asst. paper machine supt., becomes technical supervisor to succeed JAMES SCHOETTLER, who recently resigned; LEO REIMAN, enamel paper tour foreman, succeeds Mr. Chinn; DONALD MARKS becomes asst. to the paper machine supt.

Some 4,000 people attended the Diamond Jubilee Family Days during the

Arvold Promoted by Wausau

WILLIAM V. ARVOLD JR. has been elected vice pres. for manufacturing at Wausau Paper Mills Co. The announcement was made by D. B. SMITH, president and gen. mgr. Mr. Arvold has been with the firm since 1953, when he joined the staff as technical director; he became mill mgr. in 1957. He was at one time in the Central Research dept. of Marathon Corp.

High machine speeds? High temperature headbox stock? You need NASH Vacuum Pumps!



Air from the suction rolls on paper machines carries with it substantial quantities of moisture. This considerably reduces the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump, because of the unique principle of operation, the bulk of this vapor is effectively condensed inside the pump. The total capacity of a Nash is therefore increased.

When you specify a Nash Pump it can be closely sized to the job. It is not necessary to select an over-sized unit, because the rated capacity of the Nash may be relied upon.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

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Strictly Personal

first week in June at Wausau Paper Mills Co., Brokaw, Wis. The firm is celebrating its 60th anniversary. Guests were taken on escorted tours through the mills. . . .

HAROLD LARSON becomes asst. to the board mill supt. at the Wisconsin Rapids (Wis.) div. of Consolidated Water Power & Paper Co.

Orr Felt Hosts Miami Valley Superintendents

The Miami Valley Superintendents meeting was held in conjunction with the 14th annual Orr Felt party at Piqua, Ohio. Orr Felt & Blanket Co. hosted 118 paper makers at golf at the Piqua Country Club and held a dinner at the Orr Felt plant. Morrison B. Orr, president of the company, welcomed the guests and Dan Spencer, sales manager, acted as emcee for the dinner, presenting over fifty prizes to the golf winners. Over 180 industry men attended the dinner.

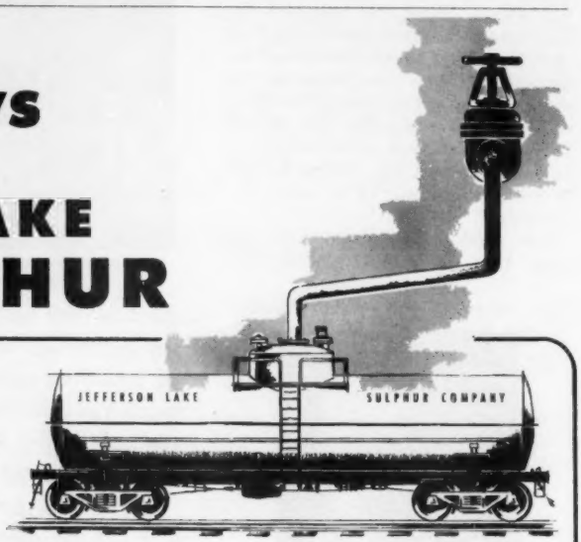
The Miami Valley Superintendents held a short meeting during the dinner and officers nominated for 1959-60 are: Chairman, James Ozias, Oxford Paper Co.; vice chairmen, Clifton Towles, Champion Paper and Fibre Co., and Donald Collins, Mead Corp.; secretary-treasurer, Eugene Forney, Oxford Paper Co.

At the Orr Felt & Blanket Co. golf party which this year combined with the Miami Valley Supts. meeting, host MORRISON B. ORR, president of Orr Felt, gets together with BILL RINEHART, United Engineering & Foundry Co.; ROBERT HOHLMAN, John W. Bolton & Sons; and DARWIN MISCALL, Asten-Hill Mfg. Co.

ROBERT O. STEVENSON of Champion Paper & Fibre Co. was one of the 118 paper makers at golf at the Piqua Country Club, Ohio. With him is DAN SPENCER (left) of Orr Felt.

JOHN JACKSON (left) of the Mead Corp. photographed with W. M. BOYCE of American Cyanamid Co. after golf. Both later attended the dinner which was held at the Orr Felt plant. . . .

Save 3 Ways with JEFFERSON LAKE LIQUID SULPHUR



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You can rely on Jefferson Lake's many years of experience with tank car shipments for rapid delivery anywhere. Our fleet of specially designed and insulated tank cars, largest in the industry, stands ready to move your order. Send today for our illustrated brochure describing proper handling procedures for this new low-cost means of transportation.

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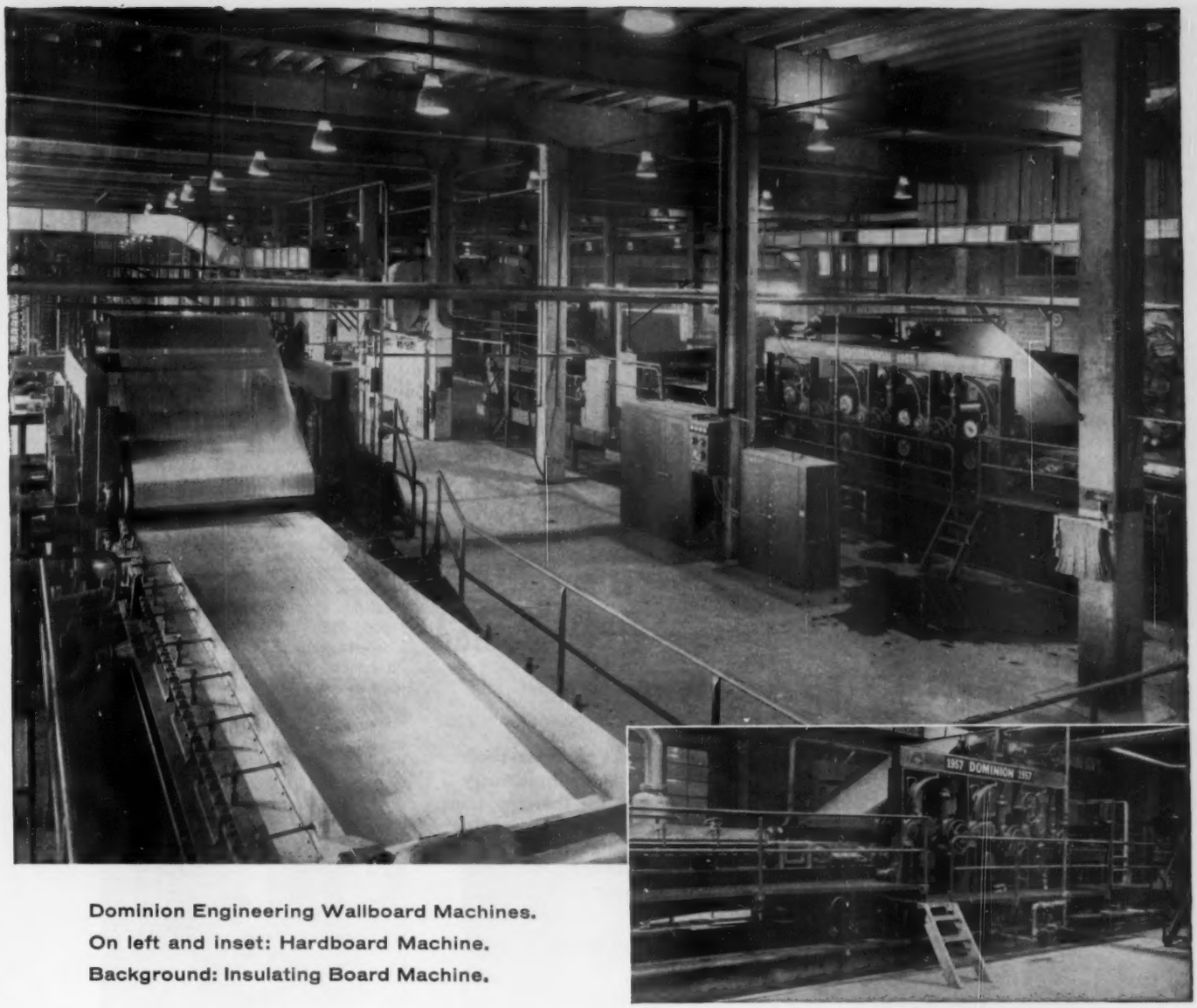

Dominion Engineering Wallboard Machines.
On left and inset: Hardboard Machine.
Background: Insulating Board Machine.

Designed and produced by DOMINION:

Hardboard and Insulating Board Machines, installed at the Saskatoon Mill of the Prairie Fibreboard Company.

DOMINION-Canada's foremost supplier of Pulp, Paper and Board Machines since 1920.

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WARREN

#11 HIGH DENSITY SCREW PUMP FOR CAPACITIES UP TO 750 TONS PER DAY

High Density Screw Pump*
that costs less than any other method of moving high density stock

Take lower initial cost . . . and add to this the fact of proven production economies. Then you'll see why the paper and pulp industry is hailing this Warren Pumps exclusive as one of the soundest, most economical developments in years.

Here are some of the things this new high density screw pump will do:

PUMP capacities to 750 TONS PER DAY (depending on density)
PUMP WATER as well as HIGH density stocks
DELIVER pressures to 300 PSIG
HANDLE densities to 18% AND HIGHER
ELIMINATE need for auxiliary feeding
PUMP stock with NEGLIGIBLE WORKING
DELIVER stock WITHOUT PULSATION
AVOID the DIRT and MAINTENANCE of other methods
PERMIT DIRECT DRIVE or V-BELT DRIVE
SAVE BUILDING COSTS by installing deckers on ground floors

This is no drawing board dream. These pumps have undergone the most severe field tests for nearly two years . . . and results are unquestioned!

*Patent pending

Tell us about your own high density stock pumping problems. Or simply write for more complete information . . . now!

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CENTRIFUGAL SCREW RECIPROCATING GEAR

WARREN PUMPS, INC.

WARREN, MASSACHUSETTS

PP-42

ROBERT B. TURK, technical coordinator at Hammermill Paper Co., has been appointed to the staff of Diamond Alkali Co.'s pulp and paper technical service laboratory, where he will supervise projects and technical service assignments for Diamond Alkali customers.

Appointment of URBAN E. (PACKY) MCFARLAND to the newly created post of gen. traffic counsel has been announced by Owens-Illinois Glass Co. In announcing the move, SMITH L. RAIRDON, O-I vice pres., paid tribute to the "great contribution Packy McFarland has made to both O-I and the transportation industry during the past three decades." Becoming gen. traffic mgr. is RICHARD E. KNUDSON, formerly asst. gen. traffic mgr. . . . JACOB CZUK, a 45-year employee of Allied Paper Corp., Kalamazoo, Mich., retired June 1. He had served as a coating machine operator at the Bryant Coating Mill div. . . . O. W. SVENSON JR. has been named mgr. of the Chicago sales office of Allied Chemical's General Chemical div. He has been Detroit mgr. for the past five years. . . . WILLIAM K. SHARPLES of Milwaukee has announced formation of Boxmakers Supply Co. to act as mill agents in the sale of all grades of paperboard and boxboard throughout Wisconsin. He was formerly asst. sales mgr. in the Paperboard div. of Cornell Paperboard Products Co. . . . L. E.

Marinette Paper Co. Employee Wins 12th Bolton Award

MRS. ANN E. BURKE, personnel records clerk at the Marinette, Wis. mill, has been awarded the $1,000 first prize in the 12th annual essay competition sponsored by John W. Bolton & Sons Inc., Lawrence, Mass. Subject of this year's contest: "I Want to be Kept Informed".

Second prize of $750 went to G. W. HACKETT, personnel mgr. for Container Corp. of America at Santa Clara, Cal. Third prize ($500) was won by MISS JACQUELINE FANDREY, personnel sec. at Bergstrom Paper Co., Neenah, Wis.

Other prize winners included: JAMES STOLL, Crown Zellerbach Corp., Camas, Wash.; DANEEN MARILYN GEER JR., Sutherland Paper Co., Kalamazoo, Mich.; ROBERT A. BAGG, Strathmore Paper Co., West Springfield, Mass.; GLENDORA E. HENRY, Schmidt & Ault Paper Co., York, Pa.; NORMAN B. WHITTIER, Hammermill Paper Co., Erie, Pa.; GEORGE C. SISLER, Bergstrom Paper Co., Neenah, Wis., and ALFRED A. MANN, S. D. Warren Co., Cumberland Mills, Maine.

J. H. Smart Named Supt.

. . . of the Nekoosa, Wis. paper mill of Nekoosa-Edwards Paper Co. He succeeds ARTHUR SARVER, paper mill supt. for the past 12 years, who will continue as staff supt. The changes, according to President CHARLES H. REESE, are being made "in preparation for Sarver's retirement and to assure a smooth transition while he is still available in an advisory capacity."

Mr. Smart joined Nekoosa-Edwards in 1939 as a chemist in the laboratory. He has been a supervisor in testing and quality control work at the Port Edwards mill and was asst. paper mill supt. of that plant before transferring to Nekoosa in 1953.

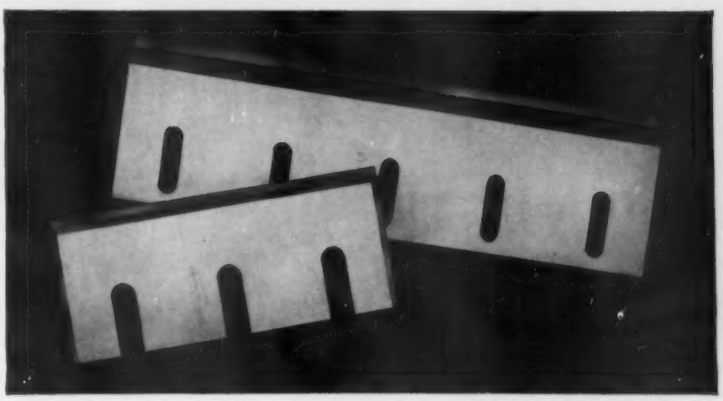
DOXSIE has been named mgr. of the corn div. of A. E. Staley Mfg. Co., Decatur, Ill. Formerly asst. mgr., he will continue to have charge of the sales organization for industrial starches, dextrins, syrups and chemical products.—Don W. Zeigler

Campbell ..... Robillard

Mando Promotes Campbell

ROBYN A. CAMPBELL has been named treas. of Minnesota & Ontario Paper Co. Formerly gen. sales mgr. of the Paper div., he succeeds the late E. A. JOHNSTON. Also announced was the election of WALTER H. ROBILLARD as asst. treas. He had previously served as asst. gen. auditor.

With almost 30 years in paper production, research and sales, Mr. Campbell is widely known in the United States and Canadian industry. A graduate in pulp and paper chemistry from New York State College of Forestry, Syracuse, he joined Mando in 1947 as asst. to the vice pres. in charge of production. Research and sales assignments followed, and in August 1956 he became gen. sales mgr. of the Paper div. Earlier in his career he had been asst. gen. mgr. of Blandin Paper Co. and had held various positions with United States Gypsum Co., Container Corp. of America and Oxford Paper Co.



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PULP & PAPER

Strictly Personal

Bert Raprager Retires

Bert F. Raprager, internationally recognized authority in the field of machine coating, has retired as paper machine consultant at Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis. He had been with the firm 30 years and had been with the industry for 58.

Mr. Raprager joined the firm in 1929 as paper machine supt. at the Wisconsin Rapids div. and played an important role in the development of the Consolidated coating process in the early 1930s. He supervised the first trials of on-the-machine coating invented by the late Peter Massey and was co-inventor with Massey and W. F. Thiele of the refinements that produced the first machine-coated paper for commercial use.

Prior to joining Consolidated, Mr. Raprager was employed by Kimberly-Clark Corp. and International Paper Co.

GILBERT and NASH AIR OPERATED felt and wire guide

New . . . Simple . . . Compact.
Now operating on machines at speeds over 2,000 fpm, the Gilbert and Nash Air Guide reacts quickly with reliability and precision.

Although entirely air operated, this new guide uses air only when a correction is made. What's more, "swing roll" effect or guide roll oscillation is completely eliminated.

Guide roll is held stationary if air supply is interrupted . . . there are no springs to pull guide roll with possible damage or loss of wire or felt.

Complete standardization of *all* guides can be easily accomplished because the same model air guide is used for wires, wet and dryer felts.

We invite you to request for our representative to call.

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APPLETON MACHINE COMPANY
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Northeast

C. A. Gallup, asst. to the president, New York and Penn, celebrates his 45th year with New York and Penn. He began his career shoveling black ash in the Lock Haven, Pa., soda mill. . . . Everett Ingalls, vice president i/c manufacturing and mill manager for many years, S. D. Warren Co., has retired, but continues as a director. The U. of Maine graduate joined International Paper Co. in 1916 as a draftsman in the New York office, later was resident engineer at IP's Berlin mill and held other posts until he joined S. D. Warren in 1935 as production supt.

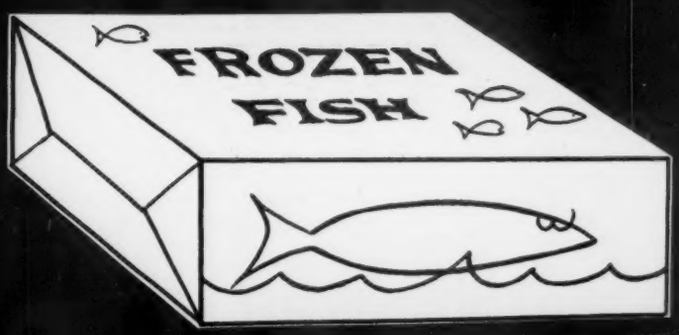
Dr. R. Logan Mitchell steps up as general manager of research and Dr. George B. Creamer as assistant general manager, Rayonier Inc. Dr. Mitchell joined Rayonier in 1938 as a chemist, earned his b.a. at Centre College of Kentucky and his ph.d. at the U. of Buffalo. Dr. Creamer joined Rayonier in 1950 as a chemist, has his ph.d. from McGill U. at Montreal and his b.s. and m.s. from the State U. of New York, College of Forestry at Syracuse U. Succeeding Dr. Mitchell as manager of Rayonier's eastern research division at Whippany, N.J. is Dr. D. K. Smith. Also promoted is Dr. John P. Hollihan to asst. manager. Dr. S. Earll Church has been named manager of Rayonier's technical service succeeding Dr. Creamer.

James M. Carnie is now superintendent of the Fourdrinier and saturating dept. of Latex Fiber Industries. . . .

Seibert ..... Calder

Calder Honored by WMU

Louis Calder, former president of Perkins-Goodwin Co., New York, N. Y. pulp merchants, was recently awarded an honorary Doctor of Laws degree by Western Michigan Univ., Kalamazoo. During the past several years the Calder Foundation has enabled the school to expand its paper technology equipment, and currently a gift of $165,000 is being used to build and equip an addition to the Paper Industry Laboratories bldg. Conferring the honor is Dr. Russell H. Seibert, vice pres. for academic affairs at the Michigan school.



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GILBERT and NASH AIR OPERATED felt and wire guide

New . . . Simple . . . Compact.
Now operating on machines at speeds over 2,000 fpm, the Gilbert and Nash Air Guide reacts quickly with reliability and precision.

Although entirely air operated, this new guide uses air only when a correction is made. What's more, "swing roll" effect or guide roll oscillation is completely eliminated.

Guide roll is held stationary if air supply is interrupted . . . there are no springs to pull guide roll with possible damage or loss of wire or felt.

Complete standardization of all guides can be easily accomplished because the same model air guide is used for wires, wet and dryer felts.

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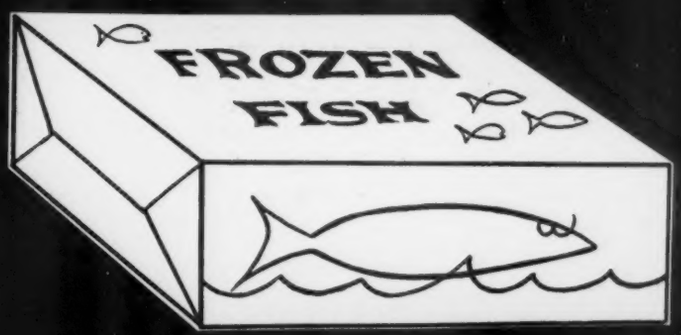

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PULP & PAPER

Strictly Personal

ALLAN T. WALSH, formerly technical director of Chemical Fine Paper and Board Div. of Standard Packaging, has been named director of research of Westfield River Paper Co.

EUGENE F. MCCARTY has joined St. Regis Paper Co. as special technical representative, Central Technical Dept., reporting to JACK E. WILBER, director of technical services.

A. GUY DURGIN, traveling representative of the U. of Maine Pulp & Paper Foundation, died May 7. He was a 1908 graduate of the U. of Maine, spent most of his life in the paper industry and had retired as mill manager of Brompton Division of St. Lawrence Paper Corp. . . . JOHN J. PENHAKER, senior sales for the Hollingsworth & Whitney Division of Scott Paper Co., was honored recently with an anniversary dinner marking 40 years of service.

WILLIAM E. ANDERSON has been promoted to asst. supt., converting dept., Riegel Paper Corp.'s Milford, N.J. mill. . . . JOSEPH JUDGE is now asst. mill supt., Hughesville mill and ROBERT OSBORNE was made night supt. of the Hughesville mill. JOHN H. PAYNE has joined Riegel as product development engineer.

MR. AND MRS. GEORGE R. WALLACE (he's president, Fitchburg Paper Co.), were guests of PRESIDENT AND MRS. DWIGHT D. EISENHOWER for a State dinner at the White House honoring Baudouin I, King of the Belgians. . . . PHILIP H. GLATFELTER, president, the P. H. Glatfelter Co., was awarded an honorary doctor of law degree from Lawrence College, Appleton, Wisconsin.

CHARLES H. DRUMMOND has been promoted to supervisor, paper inspection dept., Oxford Paper Co., and JAMES D. GREY to chief inspector. . . . ANDREW M. MCBURNEY, vice president, sales, has been elected a director of Oxford.

More Oxford promotions: PAUL A. JONES to control engineer for technical services, THOMAS A. RILEY to foreman, pulping control, CLYDE E. HENRY to foreman, control services and LEO J. CONLEY, foreman, paper control.

ELMER D. DEGRAW has retired as head of the storeroom, Hammermill Paper Co. ELMER W. MILLER succeeds him. . . . M. E. GRAHAM, Hammermill's general counsel and secretary, has been elected president of the Manufacturers' Assn. of Erie. . . . Hammermill's production manager ROBERT ARENTSON is now president of the Erie Chapter of the American Institute of Industrial Engineers. . . . JOHN P. STUNDER has been promoted to foreman of the electrical dept. and STEPHEN SYBYL to foreman of the sheet metal dept., Hammermill.

JAMES G. CRUMP JR. moves up as control supt., Great Northern Paper Co.'s Millinocket, Maine mill. . . . RAYMOND G. HART, formerly with Stevens Paper Mills Inc., is now technical director of Romar Tissue Mills, Inc.

HERBERT KISHBAUGH succeeds FRED H. HARRIS, who has retired, as manager,

Herbert C. Church, Asst. V.P. New York and Penn

Mr. Church, in this new promotion, moves to New York and Pennsylvania Co.'s New York offices where he will assist Vice President AUGUSTUS G. PAINE in the management of all manufacturing activities. He will also coordinate the capital improvement program and direct the research and development activities. Mr. Church joined New York and Penn in 1946 as a coating technologist, is a graduate of the pulp and paper dept. of the College of Forestry at Syracuse U., was a pulping chemist with Champion Paper & Fibre Co., and chief chemist for American Coating Mills.

Stirling ..... Trelfa

In New Posts at Perkins-Goodwin

THOMAS L. STIRLING, formerly vice president i/c sales, Champion-International Co., and sales manager of the Lawrence mill when Oxford Paper Co. acquired it, has joined Perkins-Goodwin Co. as director of marketing—paper division.

RICHARD T. TRELFA, who joined P-G in 1958 as director of technical services, has been elected a vice president and director. His experience includes Hercules Powder Co.'s Paper Makers' Chemical Dept. (10 years), and Watervliet Paper Co. as technical director and plant manager. He will re-locate in New York.

Greater Production of Higher Quality Pulp

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- *at Lower Cost*

This is the end result of the various processes and equipment which we have installed in pulp mills throughout North America. Send us details of your requirements.

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in a tornado of abrasive dust!

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for weeks at 75° C below zero!

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in thick, sluggish mud!

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ALLIS-CHALMERS A-1151

Strictly Personal

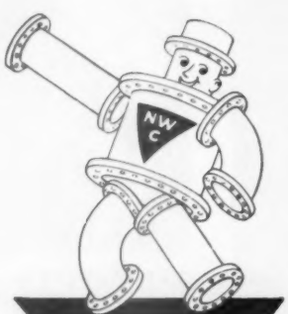
New York sales branch of Allied Chemical Corp.'s Solvay Process Div. . . . LUTHER E. STANHOPE has been elected executive vice president, and JOHN M. HARKINS, vice president i/c U.S. government sales Carter Rice Storrs & Bement Inc. and HENRY L. JULIER, vice president and manager of subsidiary Baltimore-Warner Paper Co. Inc.

ALBERT D. MERRILL, president of Chemipulp Process Inc., Watertown, N.Y., died June 7. He was a graduate of Clarkson College and his industry career includes asst. engineer at St. Regis Paper Co., Deferiet, N.Y., and chief engineer, the Stebbins Enginering and Mfg. Co. He formed Chemipulp in 1927 with THOMAS L. DUNBAR and A. F. RICHTER. . . . A. E. "TONY" THEISEN succeeds Mr. Merrill as president. He is also secretary. JACK GRANT is vice president and treasurer and B. E. GRUNTORAD, asst. treasurer and asst. secretary.

PAUL LYON has been named manager of marketing research for West Virginia Pulp and Paper Co.

RALPH K. BEHR has been named manager of the New York district sales office of The Babcock & Wilcox Co.'s boiler division. GERALD S. WHITE succeeds him as manager of the division's Boston district sales office.—Maurice R. Castagne.

CUSTOM FABRICATIONS



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New Officers of TAPPI Group

Officers for 1959-60—Metropolitan District of Empire State, TAPPI: Chairman; Harold L. Peckham, Oxford Paper Co.; chairman-elect and program chairman, Francis R. Marchetti, Titanium Pigment Corp.; secretary-treasurer, Alfred M. Hartley, Jr., Nopco Chemical Co.; publicity chairman, Con N. Carrano, James Carrano's Sons; membership chairman, Donald Gamble, Dupont Co., and nominating committee chairman, John H. Dougherty, Union Bag-Camp Corp.

The executive committee: Philip L. Talips, West Virginia Pulp and Paper Co.; Elliot S. Kohn, Rowland Tompkins & Son; Maurice R. Castagne, Eastern U.S., Canada editor of PULP & PAPER and assistant editor, PULP & PAPER INTERNATIONAL; Edward F. Hudson, Lowe Paper Co., and Dudley J. Nixon, Geigy Chemical Corp.

Schoettler Becomes Great Northern Technical Director

Great Northern Paper Co. at Millinocket, Maine, has announced the appointment of Dr. James R. Schoettler as technical director. He was formerly technical supervisor for Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.

A mechanical engineering graduate of Purdue Univ., Dr. Schoettler received his ph. d. from the Institute of Paper Chemistry in 1951. Following service in Korea with the U. S. Marine Corps, he was engaged in pulp research for Kimberly-Clark Corp. and joined Consolidated in 1956.

The appointment fills the vacancy caused by the promotion of Richard V. Osborn to the newly created post of director of product planning for Great Northern. Mr. Osborn had been technical director since 1957.

Safety Record at Great Northern

On July 1, East Millinockett, Me., mill of Great Northern Paper Co. celebrated passing 1,000,000 man hours without a disabling accident and aimed for even higher records. A Million Man Hour Club was formed of all 850 employes, each one getting a certificate and pencil memento.

Promoted at Simpson Paper

W. R. DENMAN JR. becomes sls. mgr. for printing & fine papers at Simpson Paper Co., Everett, Wash. He joined Simpson 7 yrs. ago as lab technician, later becoming salesman, quality control supervisor and administrative asst. for sales.

Pacific

ROBERT YOUNG, exec. vice pres. of Crown Z Canada, transfers to CZ San Francisco headquarters as asst. vice pres.-special assignments. . . . at Western Waxide's San Leandro plant PAUL JENSEN advances from junior to senior industrial engr. and CECIL IREX to traffic supervisor. . . . promotions at CZ Camas div.: JOSEPH BLASCHKA from asst. tech. supervisor to coating and sizing asst. supervisor, MAX KING from analytical and solutions

Ticoulat ..... Wilkin ..... Zellerbach

New International Subsidiary For Crown Zellerbach

In recognition of its world-wide industry interest Crown Zellerbach Corp., San Francisco, announces creating a subsidiary known as Crown Zellerbach Corporation International. R. O. HUNT, president of the parent Crown organization, says this new company will provide greater scope for activity abroad in addition to protecting and strengthening Crown Z's existing markets in foreign countries.

G. J. TICOULAT, who continues as senior vice pres. and board member of CZ, has been named president of the international subsidiary. He is relinquishing direct responsibility for marketing and sales to head up activities outside of North America. KING WILKIN who has been serving as president of Zellerbach Paper Co., has been elected vice pres.-marketing of CZ—a new corporate position. As such he assumes top executive responsibility for Crown's over-all marketing program. WILLIAM J. ZELLERBACH, formerly asst. vice pres. and director of marketing services, becomes vice pres.-marketing services.

Plan to stay ahead... MODERNIZE!

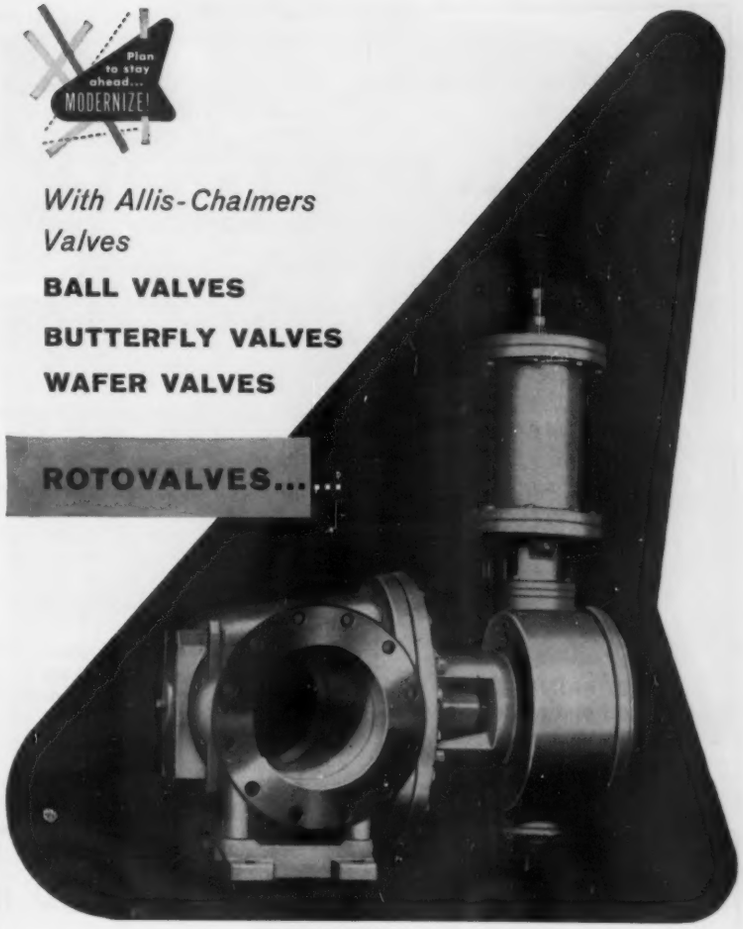
With Allis-Chalmers Valves

BALL VALVES

BUTTERFLY VALVES

WAFER VALVES

ROTOVALVES.....



Rotovalves have a flexibility that makes them suitable to any type of operation, with any method of control, in any location. Only Allis-Chalmers Rotovalves give you all these features:

Greatest Rangeability — In A-C Rotovalves, rangeability is greater than 150 to 1.

Least Pressure Loss — Full-line opening means less head loss, lower operating costs.

Easiest to Operate — Hydraulic imbalance and mechanical design make it easy for one man to close the valve as fast as is required. Less power is needed in mechanical or electrical operation.

Greatest Initial Shut-Off — Rotovalve is 55% closed at 25% stroke, and 92% closed at 50% stroke. In comparison, gate valves are only 18% closed at 25% stroke and 43% closed at 50% stroke.

Most Controlled Closing Time — Closing as quickly as 1/10 second or as slowly as needed. Fast initial closing limits reversal of flow.

Most Positive Closing — Drop-tight, positive closing. Self-purging, monel-to-monel seating. Pressure-tight bolted head, easily-repacked stuffing box, and machined and lapped seats are additional features.

For information on the complete line of Rotovalves, and butterfly, ball and wafer valves, contact your nearest A-C valve representative, or write Allis-Chalmers, Hydraulic Division, York, Penna.

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St. Francisville Paper selects

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Electric Roll Cart

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Horiz. Agitators

Clay Agitators

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Wood Conveyors

Broke Conveyors

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Seattle 4, Wash.

chemist to kraft mill chem. engr., JAMES LEITH from kraft mill chem. engr. to asst. tech. supervisor. . . .

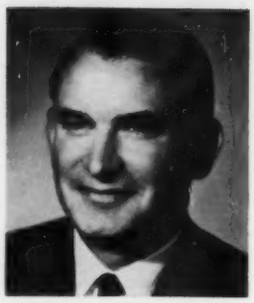
W. S. DUGGAN, supervisor of sls. promotion for Simpson Paper Co. and commander of 104th Infantry Division Artillery (reserve) at Seattle, promoted to Brigadier General, USAR. . . . TONY JENCK becomes finish room foreman at Ketchikan Pulp Co. plant in Ketchikan, Alas., succeeding TED DOYLE who resigned to join Alaska Lumber & Pulp Co.

Weyerhaeuser Pulp Div. at Everett promotes ALFRED GRAEF, tech. dir. of sulfite mill, to newly created staff position in which he is responsible for reviewing quality of paper-grade pulps and analyzing customer pulp-quality requirements according to Pulp Mgr. R. J. LEROUX; A. A. BROZ is the new tech. director.

W. A. WURSTER, sls. mgr. for shipping containers at Camden, N.J. for several years, becomes asst. to the vice pres. of Weyerhaeuser Timber Co. at Tacoma, Wash. working in the Kieckhefer-Eddy Div., according to vice pres. HOWARD W. MORGAN.

ALLEN K. HALLER, tech. supervisor and Orzan plant foreman at CZ Lebanon, Ore. div., is promoted to Orzan production supt. and BERNARD E. BERGMANN, formerly of Crown's Port Townsend div., succeeds him as tech. supervisor. . . .

S. P. "TED" STRAYER, asst. to supt. of manufacturing at St. Regis Paper Co.'s Tacoma, Wash. 420-plant, transfers to Pensacola, Fla. as asst. to R. G. COHN who supervises two St. Regis mills at this location.



Joins Weyerhaeuser Timber Co.

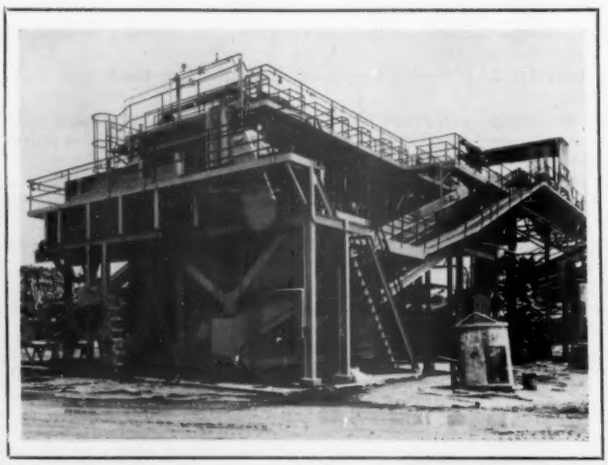
DEREK G. CURRIE joins Weyerhaeuser Timber Co. headquarters at Tacoma, Wash. as Pulp Div. manager responsible for production, sales, engineering and research. Before joining WTCo. he was vice pres.-gen. mgr. of Eastern Fine Paper & Pulp Div. of Standard Packaging Corp. and, earlier in his career, served Indian govt. as dir. of paper.

HARRY A. BINZER, secty. & asst. treasurer of Puget Sound Pulp & Timber Co., died suddenly June 17 following a heart attack at his home in Bellingham, Wash.

BOB KUSSMAN, superintendent of the Container Corp. of America board mill in Tacoma, Wash., was married recently to

ANOTHER F.M.P. BARKING DRUM INSTALLATION

St. Francisville Paper Co., St. Francisville, La.



F.M.P. Barking Drums

Low cost debarking because of:

Drum shell speeds up to 8 RPM.

Sustained continuous operation due to short down-time.

Discharge gate regulates flow of logs from drum.

Extended drum life because of:

Chain-suspension with shock-absorbing spring-loaded bearings.

Shell section of hot rolled M-bars welded and riveted to heavy ship channel rings spaced for shortest span of unsupported M-bar with adequate bark escape area.

Drums can be operated dry, wet, or combination dry-wet.

FIBRE MAKING PROCESSES, INC.

Tribune Tower
Chicago 11

Russ Bldg.
San Francisco 4

MARTY BURKS, receptionist at the nearby Tacoma Division of St. Regis Paper Co. Both previously married, Bob has two children and Marty, one. They will live at "The Farm", 1117-13th St. S.E., Puyallup, near Tacoma.—Louis H. Blackerby.

Ribbon Cutting Opens American Cyanamid Bldg.

JOHN M. FULTON, Chamber of Commerce pres. and corporate representative of Crown Zellerbach Corp., cuts ribbon in dedicating new building recently occupied by American Cyanamid Co. in Portland, Ore. Regional sales, distribution and technical services for eight divisions & subsidiaries are centrally located here at 3145 N. W. Yeon Ave. American Cyanamid men (front row, l. to r.) WARD SMITH, reg. sls, mgr. for Lederle; K. H. TATE, office mgr., O. M. CORNELL, reg. mgr. for paper chemicals dept.; W. C. MARSHALL (2d row, far right), reg. sls. mgr. for Organic Chemicals Div.

Sigurd Solvason Dies

Sigurd Solvason, widely prominent builder of paper mills in many parts of the world, died recently at his Klamath Falls, Ore. home.

He began his career in the industry in 1919 as a surveyor for Minnesota & Ontario Paper Co. Later, as res. engineer at International Falls, Minn., he helped supervise Mando's expansion projects in the area.

In 1935 he joined Merritt-Chapman & Scott Corp. as chief field engineer during construction of Union Bag & Paper Corp.'s mill at Savannah, Ga. In 1937-38 he supervised the design and construction of National Container Corp.'s plant at Jacksonville, Fla.

As a representative of John A. Hardy, paper mill consulting engineer, Mr. Solvason was project mgr. for the erection of a mill at Atenquique, Mexico. The mill was completed in 1946. He later returned to Mexico to direct construction of a paper plant at Tuxtepec.

In 1952 he was sent by Merritt-Chapman & Scott to Hadera, Israel, where he managed construction of American Israeli Paper Mills Ltd.

RIDGID No. 2-S Spiral Reamer
⅛" to 2" Capacity . . . Self-Feeding for Least Effort

For Smooth, Easy Reaming it has to be
RIDGID®

No. 2
⅛" to 2" Capacity
No. 3
⅜" to 3" Capacity

RIDGID
"LonGrip" Reamers
No Thinned or Flared Walls

Take your choice—Spiral or "LonGrip"—you can't beat these RIDGID Reamers. For hand reaming, you probably prefer the effortless self-feeding Spiral; for power use, the "LonGrip" five-fluted reamers. Heat-treated cutting edges offer extra-long service . . . will not dig in and thin or flare walls. All RIDGID Ratchet Reamers come equipped with handle.

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For smoother, faster reaming
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Byers PVC Pipe scotches corrosion

where to use it:
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- caustic soda lines
- chlorinators
- sodium hypochlorite lines
- sodium chlorate lines
- liquor lines
- sodium sulphite lines
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- hypochlorus acid
- demineralized water lines

here's why:
- highest corrosion-resistance
- will not contaminate
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- high working pressures
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Write our Engineering Service Department for copy of this new 32-page illustrated catalog on Byers PVC Pipe.

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Title_____
Company_____
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1,000,000 Man-Hours Without a Lost-Time Accident

. . . is the record of the Pulp & Paper div. of Powell River Co. Ltd. in British Columbia. Accident frequency in 1957 was 17.56; in 1958 the figure was reduced to 6.35, and so far this year it is 0.75. The mill has had only one lost-time accident in the first five months of 1959, that involving a total loss of less than one week.

Canada

RON GOURLAY, who has been Crown Zellerbach Canada's director of economic planning, has been appointed mgr., converted papers, a newly created post.

E. W. PLETZER, formerly asst. supt., for British Columbia Forest Products Ltd. at its Crofton mill, has been appointed supt. of operations. MICHAEL CEBROWSKI, formerly tour foreman, is now asst. supt.; G. C. BANKS, formerly kraft mill and quality control chemist, is tour foreman. . . . G. L. M. HELLSTROM of Montreal, for many years head of Paper Machinery Ltd. and related companies, has been awarded the Gold Medal of the Swedish Export Assn. for his service in promoting industrial relations with Canada. After leaving Sweden in 1916 he spent several years in England with Boving & Co. Ltd.

P. A. HARAKAS has been appointed chief engineer, Ontario Paper Co. Ltd., Thorold, Ont., according to announcement by ARTHUR A. SCHMON, president and gen. mgr. The position was formerly held by M. H. JONES, who continues in active service with the company as a vice pres. R. W. BECKET, legal counsel for Canadian International Paper Co. at Montreal and a director of several CIP subsidiaries, has been named a vice pres. of the company.

DUNCAN A. WARD is asst. sec. of St. Lawrence Corp., President P. M. Fox announces. Mr. Ward started with the company at its East Angus mill, moving to the Montreal head office six years ago. He succeeds C. W. DAVIDSON, retired. . . . C. D. HOWE, former minister of trade and defense production in the Canadian government, has been reelected chairman of the board, Price Brothers & Co. Ltd., Quebec. . . . CECIL E. MACDONALD has been made asst. to the president of Riordan Sales Corp., Montreal, after 12 years with Canadian International Paper Co., the parent company.

DR. JOHN S. BATES, formerly with Price Brothers & Co. Ltd. in various technical capacities and mgr. in Canada for Price & Pierce Ltd. for many years in Montreal, has been appointed industrial consultant for New Brunswick, a province for which he has often acted in an advisory capacity. He was chairman of the New Brunswick Forest Development Commission that made an exhaustive survey in 1957.

R. J. ASKIN has been appointed exec. vice pres., development, engineering and services, for Abitibi Power & Paper Co. Ltd., Toronto; and P. E. ROBERTS becomes exec. vice pres., operations. Both

Find Out how others are solving INDUSTRIAL TREATMENT PROBLEMS

Right now, send for your free copy of the current and future issues of "Water & Waste Treatment News." This new publication is packed with helpful stories on how modern plants are saving by salvaging materials...how they are cutting anti-pollution waste treatment costs. Write CHAIN Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT

Honored by CPPA

F. L. MITCHELL, gen. mgr. of the Canadian Pulp & Paper Assn. at Montreal, has been awarded an honorary membership in the association's Technical Section. The award, made during a recent meeting at Murray Bay, Que., was in recognition of his outstanding service to the industry. Others who have been so honored include: ARTHUR BAKER, DR. JOHN S. BATES, DR. W. B. CAMPBELL, T. L. CROSSLEY, A. L. DAWE, R. S. KELLOGG, E. M. LITTLE, DR. OTTO MAAS, DR. J. N. STEPHENSON and R. L. WELDON.

men have been with Abitibi for many years in executive capacities. While the firm held an interest in Alaska Pine & Cellulose Ltd., Mr. Roberts was gen. mgr. at the Vancouver, B.C. headquarters. He returned to Toronto when Rayonier Inc. acquired controlling interest and Abitibi withdrew.—Charles L. Shaw.

Bleach System Patent Issued to Hooker

Automatic and continuous processes for producing high-quality calcium hypochlorite bleach liquor at rates of 20,000 gal. per day and higher are covered in United States patent No. 2,889,119 issued to Hooker Chemical Corp.

The system was developed by Hooker as a service to the pulp and paper industry, where large quantities of bleach liquor are required. Development work started in 1949, and the first operating unit was installed in 1955. Since then six more systems have been installed in North America.

The automatic units, which are said to show a chemical saving of 2 to 3% and require only nominal maintenance, are replacing conventional batch systems.

Essentially, the process involves the uniting and reaction, under relatively high pressure, of automatically-controlled flows of chlorine gas and calcium hydroxide (lime) slurry. With turbulent mixing conditions in small reactors, the reaction is completed in a few seconds. The resultant calcium hypochlorite bleach liquor is clarified in cyclones, and any unreacted lime is recycled through the system.

Never before has the Henry Pratt slogan "Creative Engineering for Fluid Systems" been more aptly proven as truth—for creativity and experience have combined with a most sophisticated result—the totally new MONOFLANGE MK-II.*

Stemming from four years of laboratory and field development, this compact and sensible valve will impress and delight those with a feeling for quality and economics.

The Monoflange MK-II is a versatile valve with a wide variety of sizes, materials, and operators—among which is the all new SIDEWINDER®, a totally enclosed manual operator designed to be the perfect mate for the MK-II.

We believe this is a significant contribution to the valving art—one which will establish a new trend in the low price field. You will want one to test for yourself.

Write for bulletin 10

Monoflange® MK-II
RUBBER SEAT BUTTERFLY VALVE

HENRY PRATT®

*Important things are happening at the Pratt Research Laboratories—as evidenced by this new product, the first of a series to be announced as part of the new line for 1960.

Henry Pratt Company, 319 West Van Buren St., Chicago 7, Illinois
Representatives in principal cities.

Picture News of Appointments in the Industry

Beachler ..... Hornbostel

Justus ..... Ramsden

Heard ..... Shouvlin

Hornbostel Plans Retirement

HARRY C. MOORE, president of Beloit Iron Works, Beloit, Wis., has announced that LLOYD HORNBOSTEL plans to retire late this summer after 33 years with the firm. The action has been prompted by reasons of health.

E. D. BEACHLER has been named vice pres. in charge of engineering, and E. J. JUSTUS becomes vice pres. in charge of research. In making the announcement, Mr. Moore had this to say, ". . . both Lloyd and I feel that there are none more qualified than Ed and 'EJ' to take over Beloit's engineering guidance. . . . He (Mr. Hornbostel) has assured us that we may continue to call upon him for advice and guidance in years to come."

In another Beloit Iron Works appointment, FRANCIS G. RAMSDEN becomes sales mgr. He replaces DONALD R. SIMONDS, recently promoted to vice pres. Mr. Ramsden has been associated with Beloit Iron Works and the paper industry over 25 years.

Bauer Advances Two

LLOYD HEARD has been named mgr. of digester sales by Bauer Bros. Co. of Springfield, Ohio. He succeeds the late C. L. Durkee. Assisting Mr. Heard in his new assignment will be JAMES STARRETT of the company's engineering dept. Mr. Heard, a member of both the Superintendents Assn. and TAPPI, came to the Bauer organization in 1958 as southern district mgr. He was formerly project and process engineer with Longview Fibre Co. of Longview, Wash.

Replacing Mr. Heard as mgr. of the southern district is PATRICK J. SHOUVLIN, who has been a sales representative since 1949 and asst. to Mr. Heard since August 1958.

Richard W. Phelps, Gen. Mgr., Dilts Division

Mr. Phelps succeeds ROBERT J. JACOBS, who has resigned. He joined Dilts in 1949, served for 5 years as chief engineer and more recently was manager of engineering and product development.

Arthur T. Stafford Named Vice Pres.

. . . for marketing of the Packaging div. of Olin Mathieson Chemical Corp. He succeeds WALTER HAMILTON, who has been with OM since 1956, when he retired as president of Riegel Paper Corp. Mr. Hamilton will continue as a consultant. Mr. Stafford was formerly marketing mgr. of the Packaging div. and prior to that asst. gen. mgr. of the Film div. in charge of sales and research activities. (The Film div. is now part of the Packaging div.)

Bolton Forms New Division

. . . and names ARTHUR G. SCHWARZENBERG mgr. He heads the Machine Knife div., "formed as a result of increased sales and added production capacity." Mr. Schwarzenberg joined John W. Bolton & Sons in 1936 and has had experience in the parent firm as well as its Emerson Mfg. Co. div. He has served as mgr. of Emerson, asst. to the sales mgr. and mgr. of customer services. Outside field sales of the newly created division will be under the supervision of C. E. SCOLLARD, formerly field salesman in the metropolitan New York area.

Wicker Promoted by Huyck

Huyck Felt Co. has appointed DR. DAN B. WICKER as vice pres. and director of research and development.

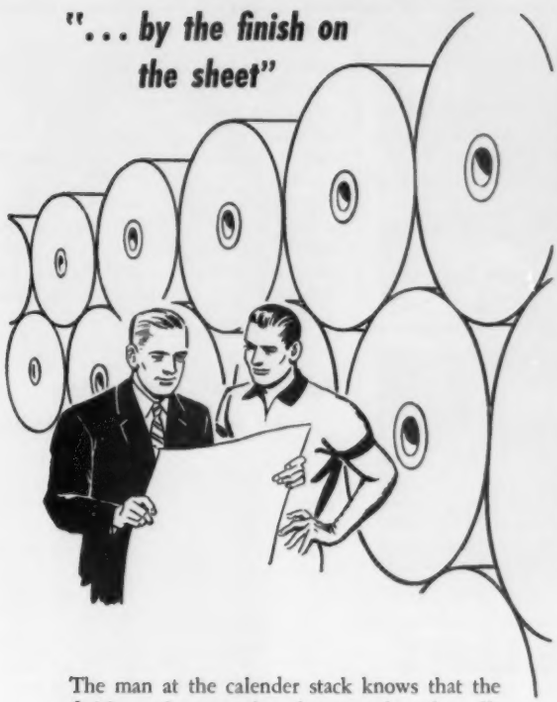
Since joining the firm he has pioneered the manufacture, testing and evaluation of paper machine felts. A ph. d. graduate from the Institute of Paper Chemistry, he was formerly with Eastern Corp. and Thilmany Pulp & Paper Co. In his new position he will be responsible for all Huyck felt research and development.

Sales VP Named by P&J

SIDNEY G. BRISCOE has been named vice pres. for sales by Pusey & Jones Corp. of Wilmington, Del. He has been with the firm 24 years and for the past five has served as gen. sales mgr. He had previously represented the company in New England and New York.

How do you measure calender roll performance?

"... by the finish on the sheet"



The man at the calender stack knows that the finish on the paper is only as good as the rolls in the calender. That's why so many of them prefer Butterworth Dura-Smooth Rolls. They have seen these rolls produce fine finishes with longer service life.

Butterworth Roll surfaces are absolutely true and even, and of ideal hardness, smoothness and density to assure superior calendering at modern stack speeds.

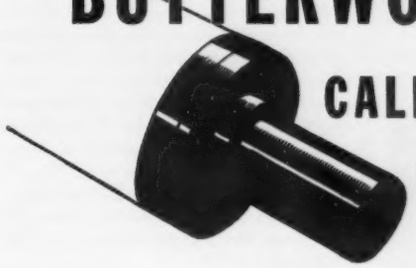
Put just one Butterworth Refill in your calender stack. Check its long service life under your own operating conditions. You'll see the difference in finer production, fewer delays.

Write for a quotation on new or refilled Butterworth Calender Rolls. We can furnish them for all makes of calenders.

VN

H. W. BUTTERWORTH & SONS CO.
Bethayres, Pa.
Division of Van Norman Industries, Inc.

BUTTERWORTH



CALENDER ROLLS

BELOIT UNIT MODERNIZATION

ONE OF A SERIES SHOWING TYPICAL BELOIT SOLUTIONS TO COMMON MILL PROBLEMS

Beloit streamflow valve

• Does your present fan pump valve create flow pulsations?...dirt and slime lumps? ...eddies and cross-currents?

Beloit Streamflow Valves ...6 sizes...elbow or tee

Beloit streamflow valves are designed *specifically* for controlling paper machine water rates. Throttling is accomplished with a central pear-shaped plug, the required flow passing smoothly around the plug. Result: uniform discharge to headbox without pulsations, eddies, or lumps! Engineering features include: positive mechanical positioning—no "floating" or "hunting" • wide gallonage range with minimum head loss • self-cleaning design • air-motor operator • valve position indicator for quick setting • heavy-duty stainless steel construction • simple controls.

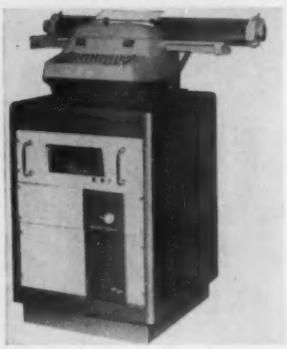
» **ACT!** *Streamline your flow problems. For complete information about Beloit streamflow valves write to Beloit Iron Works, Beloit, Wisconsin.*

BELOIT
PAPER MACHINERY
your partner in papermaking

New Equipment Section

Pipeline Information System

. . . Measures at Remote Points



Applications: For measuring, transmitting, indicating and recording flow, pressure, temperature and other pipeline variables in digital form.

Advantages: The system measures variables at remote points and relays data by means of standard communication or telemetering equipment to a central control station, where it is converted into digital form and recorded by automatic typewriter. Featured is continuous alarm monitoring with adjustable high-low set points.

Specifications: The Pipeline Information System can be adjusted to indicate pipeline variables directly in psi, degrees Fahrenheit or Centigrade, rpm, barrels per minute or whatever unit of measurement is desired.

Supplier: **Fischer & Porter Co., 241 Jackson Rd., Hatboro, Pa., U.S.A., Tel: OSborne 5-6000; and Fischer & Porter (Canada) Ltd., 2700 Jane Street, Downsview, Ont., Canada, Tel: MElrose 3-9810.**

Screen Line Expanded

. . . Small and Intermediate Sizes

Applications: To remove knots of pulp or foreign matter from pulp or paper fibers in suspension.

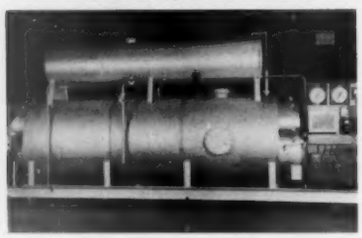
Advantages: Two new Selectifier screen models now make available small and intermediate sizes. The new 12-P is a small version of the original 24-P and is designed specifically for individual vat application on small cylinder board machines and low-capacity Fourdriniers. The intermediate 30-P fills the gap between the 24-P (3,800 gpm) and the 36-P (9,000 gpm).

Specifications: The 12-P is a low-horsepower, low-maintenance screen with a maximum capacity of 1,200 gpm. Model 30-P has a 5,700-gpm capacity.

Supplier: **Black-Clawson Co. (Shartle div.), Middletown, Ohio, U. S. A.; and Black-Clawson International Ltd., 18 Savile Row, London W. 1, England.**

Atmospheric-Pressure Liquid Heater

. . . to Replace High-Pressure Steam



Applications: For process industries (such as chemicals and pulp and paper).

Advantages: The low-pressure, high-temperature heating system is expected to replace high-pressure steam systems. In addition to lower initial cost, complicated auxiliary equipment has been eliminated. Flash tanks, condensate return systems and air ejectors are not required. In three field test installations, 40- to 50-year-old cast iron dryer rolls were converted to liquid heating. Working pressures were reduced to 15 psig or less and temperatures raised 75 to 100°F. Drying capacities nearly doubled. On one paper creping machine production is said to have increased more than 100%.

Specifications. Allis-Chalmers liquid heating equipment includes a complete line of eight heat generators of from 500,000 to 10,000,000 btu per hour net continuous output rating; two-way butterfly and three-way plug type flow control valves; single- and twin-port water-cooled rotary joints, and system pumps, motors and controls.

Suppliers **Allis-Chalmers Mfg. Co., 1126 So. 70th St., Milwaukee 1, Wis., U. S. A., Tel: SPring 4-3600**

All-New V-Belt

. . . With Horsepower Increase

Applications: For driving mill equipment.

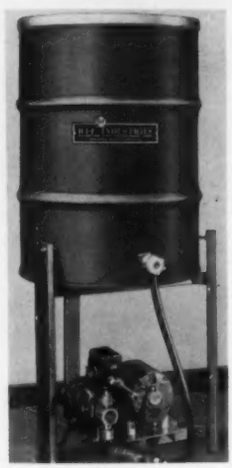
Advantages: It is claimed by the supplier that this new V-belt has a 40% horsepower rating increase over previous offerings at no increase in cost; that the belts eliminate the need for a premium belting line. The cords are normalized and impregnated with latex in every fiber, not merely surface-coated.

Specifications: U. S. Royal V-belts are available in all stock transmission widths and lengths.

Supplier: **United States Rubber Co., 1230 Avenue of the Americas, New York 20, N. Y., Tel: CIrcle 7-5000.**

Pump-Tank Combination

. . . for General Chemical Feeding



Applications: For accurate and efficient chemical feeding and for boiler water treatment.

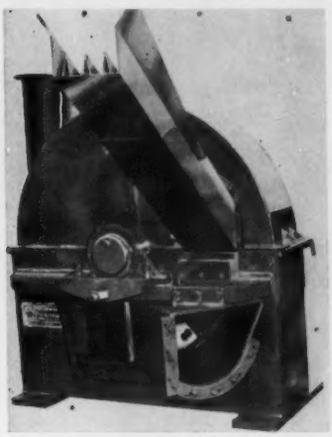
Advantages: Designed to use a minimum of space, the Proportioneers unit stands only 53 in. high. Features include: check valves with immediate cutoff; interchangeable, high-efficiency measuring cylinders; full-size reduction gears, and two types of fluid-end construction for handling various liquids. Accuracy of the Adjust-O-Feeder is ±1% of the set rate over a 15:1 range.

Specifications: The 55-gal. steel support drum containing the molded polyethylene tank for chemicals is mounted atop a three-legged angle iron frame. The pump with its strainer, fittings and hoses is mounted on cross members of the frame. The tank, fittings and tubing are constructed of corrosion-resistant materials suitable for handling most industrial chemicals.

Supplier: **B-I-F Industries Inc., 345 Harrison Ave., Providence, R. I., Tel: GAspee 1-4302.**

Horizontal Chipper

. . . 9-in. Rechipper Infeed

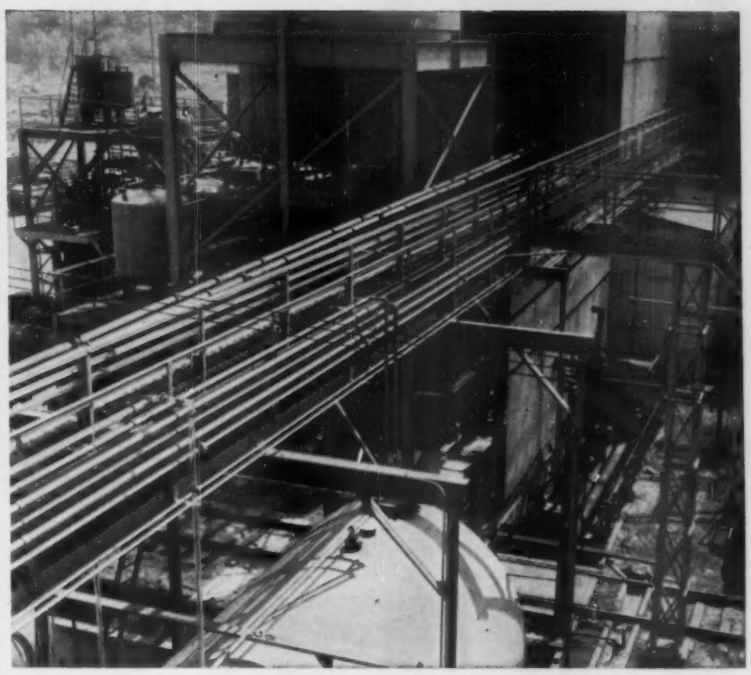


Applications: For chipping operations at the mill.
Advantages: The 9-in rechipper infeed spout will handle oversize chips from the screen, cut-offs and similar scrap. It is specially designed with three large channels bottomed to feed oversize chips correctly to the knife. The new unit is called the Double-Duty Horizontal Chipper, patents for which are pending. The addition to the infeed spout makes the installation of a separate rechipper no longer necessary.
Specifications: The new rechipper infeed spout is furnished on the 48- and 56-in. horizontal chippers and can be added to any similar existing chipper.
Supplier: **Soderhamn Machine Mfg. Co., Talladega, Ala., U. S. A., Tel: 9082; and Soderhamns Verkstader AB, Soderhamn, Sweden, Tel: 11435**

Temperature, Pressure Regulator

. . . Maintenance Minimized

Applications: For temperature and pressure regulation with steam, water, air, oil, gas or chemicals.
Advantages: This self-contained combination unit has Sliding Gate stainless steel seats that are self-lapping and self-cleaning to minimize maintenance. It is said to eliminate the need for a separate pressure regulator and to give anticipatory temperature sensing with the pressure portion of the regulator.
Specifications: The cast iron regulator is available in 2½- and 3-in. sizes with either 125- or 250-lb. ASA flanges. It is suitable for pressures to 250 psi and temperatures to 450°F. The unit is said to accurately control process temperatures of from 35 to 450°F.
Supplier: **OPW-Jordan, 6013 Wiehe Rd., Cincinnati 13, Ohio, Tel: ELmhurst 1-1352**



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Combats Extreme Corrosion Conditions!

An investment in Chemfast protection now will pay you maintenance dividends for years to come. Check these Chemfast features . . . they'll save money for you!

- Contains Devran Epoxy Resin
- Resists Chemicals
- Exceptionally durable for interior or exterior
- Resists excessive abrasion
- High Operating Temperatures — Up to 350°F.
- Available in functional, morale-building colors
- Chemical resistance effective on wood, metal and masonry surfaces
- Apply by conventional methods including hot spray

Truscon qualified representatives will provide prompt inspection, color guidance and consultation without obligation.

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Industrial Maintenance Division of
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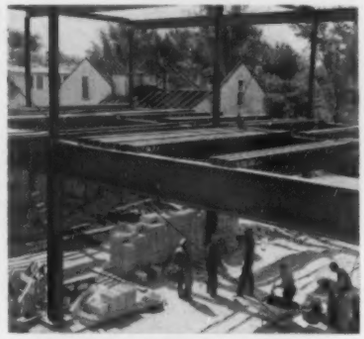
Detroit 11, Michigan

NEW CUSTOMER SERVICE LABORATORY opened in Portland, Ore. by DuPont Dyes & Chemicals Div., the first to be established for the industry's Western mills. Color specialist FERD H. AHL, JR., group leader in charge of service work, using 12-unit mixer to prepare pulp slurry for color formulations. Lab includes Atlas Fadometer (far left), Valley sheet mold & press, Pake dryer, calender coloring & coating equipment, pulp refiners, Mac Beth daylight lamp.

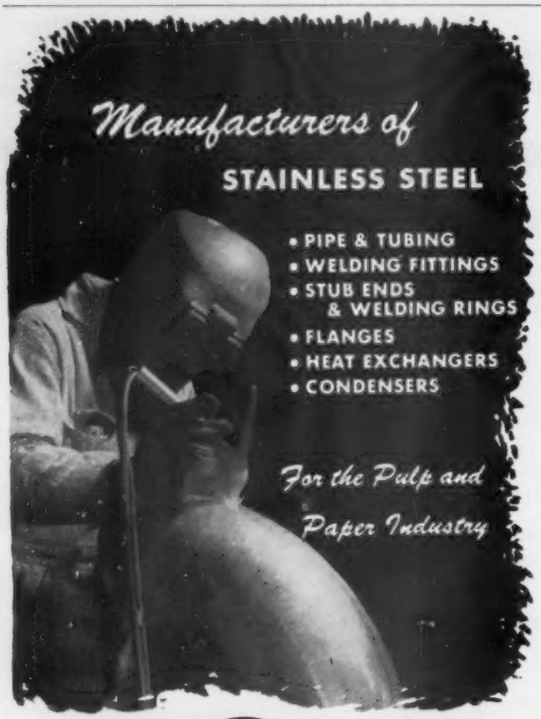
Geigy Announces New Green Dyes for Paper

J. R. Geigy, S.A., Basel, Switz., announces two new direct dyes, Paper Brilliant Flavine 7GFF and Paper Brilliant Green GFF, described as having outstanding brightness. Both are recommended for bleached cellulose papers of the kind used for posters and for decorative and wrapping papers. Flavine 7GFF is brighter than Auramine 0, and produces very pure greenish yellow shades. Green GFF produces bright yellowish greens, especially grass greens. With unsized papers an addition of aluminium sulfate is necessary to ensure complete fixation. It also brightens dull greens. Both have moderate light fastness and good backwater, water, alkali, acid and cylinder fastness. Both have solubility of 50 g/l at 90°C.



More Wire at Appleton

. . . where Wisconsin Wire Works is adding 17,000 sq. ft. to its plant. Half of the area will be devoted exclusively to the drawing of fine wire. Purpose of the project, according to President James E. Watson, is "to provide better service to our customers, both in delivery and quality control."



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Did you know there is an Owen Grapple especially designed for the pulp and paper manufacturing field? The independent tine action . . . an exclusive Owen patent . . . affords greater grabs and larger log loads.

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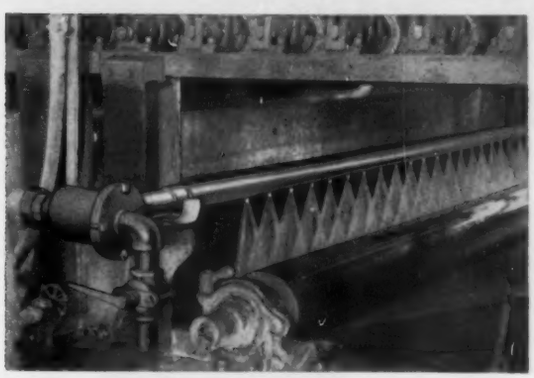
Equipment Erection and Piping

FORCEFUL
UNIFORM
EFFICIENT
SHOWERING

WITH FRESH WATER

OR WHITE WATER



DeZURIK SHOWERS

deliver a direct, fan-shaped spray without the use of deflectors. This higher velocity spray cleans more effectively with less water. Large nozzles and the elimination of sharp corners retard clogging—even when white water is used. Individual stainless steel nozzles are easily replaced, giving the equivalent of a new shower at a fraction of the cost. Specify DeZurik Showers on cylinder molds, wires, felts, flow-boxes, screens, washers, save-alls, pulp-grinders—wherever forceful, uniform, efficient showering is demanded.

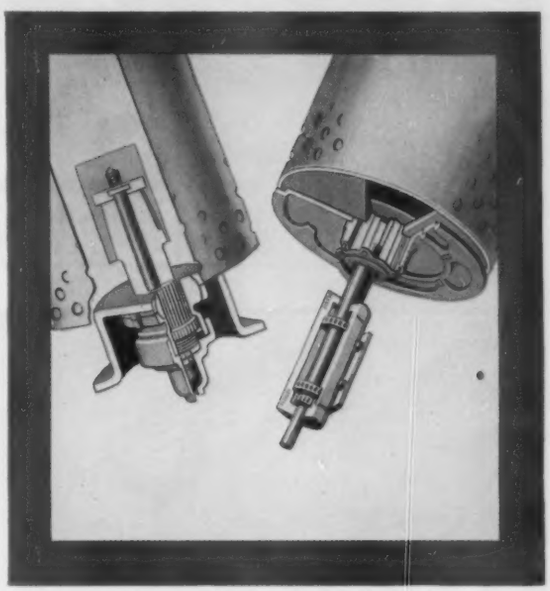
DeZURIK CLEANABLE TRIM SQUIRTS

completely eliminate "down time" to clean or replace a clogged squirt. They clean instantly, right on the job —a quick press on the plunger—a stainless steel pointer cleans the orifice and springs back! No loss of production, less broke, more paper on the reel!

DeZURIK CORPORATION
SARTELL, MINNESOTA

BELOIT UNIT MODERNIZATION

ONE OF A SERIES SHOWING TYPICAL BELOIT SOLUTIONS TO COMMON MILL PROBLEMS



Beloit rectifier rolls

• Sheet edges hard to control?
• Rectifier rolls producing lumps and strings?
• Flow "skating" on wire?
• Fiber flocs disturbing formation?

Beloit Rectifier Rolls for positive flow control

Beloit low-cost rectifier rolls, when properly located in your inlet, can eliminate the above problems. Here are some of the engineering features: external antifriction bearings or simple spherical bearings • quick removable journals • wide range of hole sizes, patterns, and open areas available • polished stainless steel construction or rubber-covered construction • scalloped flow stabilizing fins • holes chamfered *both* internally and externally.

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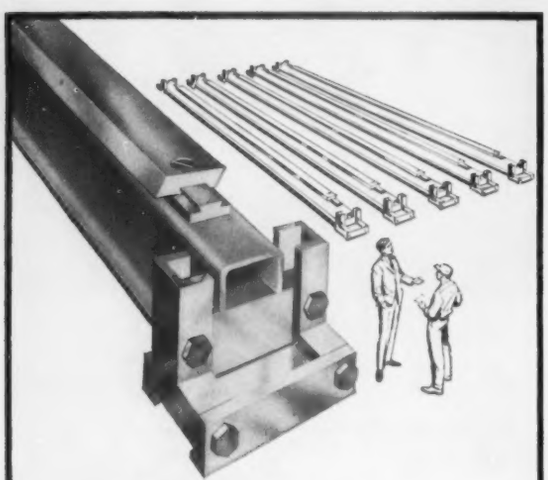

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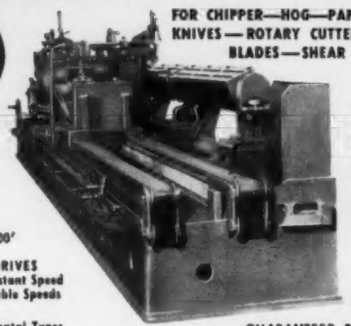

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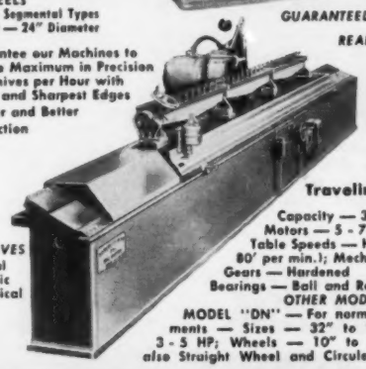

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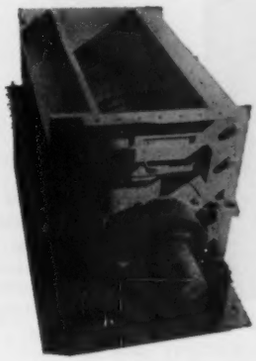

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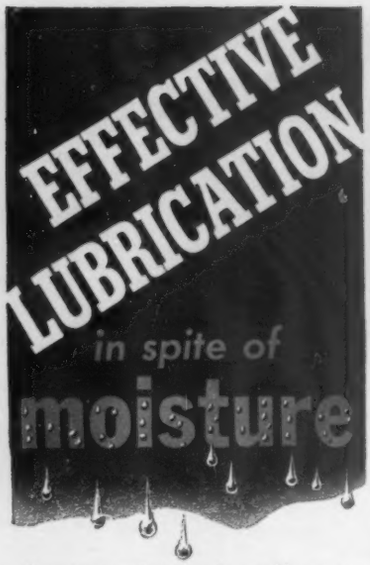

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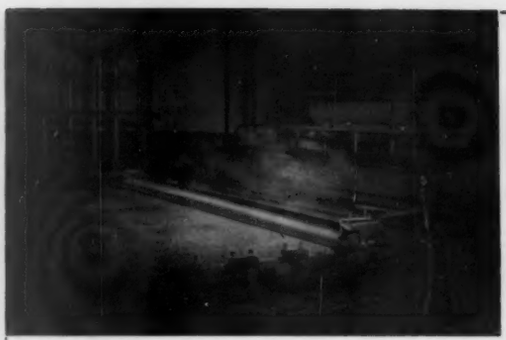

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The Last Word — PULP & PAPER — Editors' Page

International "Incidents"

The editor, just back from his 100-day trip through 13 countries of Europe (reports have appeared in June, July and this issue) tells this one on himself.

Traveling north toward the land of the Midnight Sun on Sweden's coast via overnight train, he woke up in the morning and had completely forgotten his destination and the time the train was due there (the name really was a difficult one for newcomers). He knew he had to be dressed, packed and ready to get off shortly before or after 9 a.m., but as the train rolled to very short stops in town after town, the station names were all strange to him. Each stop added to his alarm. His ticket was already in the conductor's hands and the latter was nowhere to be found. Other travelers spoke only Swedish, apparently, and even if they spoke English how could they unravel the problem? Finally, about five minutes before he was due to get off, he found a map and finally recognized the name again—Örnsköldsvik, home of the Mo och Domsjö mills.

There was some consolation in learning later that even the Swedes sometimes have trouble with the name, so many of them shorten it to Örn-vik.

Another amusing incident—the editor was crossing the Russian-Finnish border by train from Leningrad to Helsinki. He was in the hot, stuffy "Russian car" of this train which goes all the way through, with every window, even small ones, tightly sealed against smugglers. The editor had a long box-type seat in a compartment, made up as a bed, so he could take a nap during the tedious nine-hour trip which most trains would make in four hours or less. At the frontier a blue-uniformed Russian guard came through, asked if he could lift the tightly-closed flap cover of the coffin-shaped seat (there certainly was no air fit to breathe in it). The editor said, "Sure, go ahead, but why?"

"Somebody might be hiding in there," the guard responded, straightfaced.

A look at the world of pulp and paper

A few days ago PULP & PAPER subscribers received their copies of this year's WORLD REVIEW, our 40th. U.S.A. companies more aware than ever of the growing markets abroad will find a wealth of information in this issue. Supplementing our usual reports from correspondents in each papermaking country, are special on-the-spot reports from some 11 European countries visited by Albert W. Wilson, editor of P&P.

World Review in scope as well as in name, this annual statistical review of the pulp and papermaking activities of some 90 countries is a valuable reference guide. We strongly urge you to take it home and study it well.

This year's World Review takes on added significance in light of the growing emphasis upon world trade, common markets and this age of jet travel. In assessing a company's present position and reckoning its future growth, it is now necessary to know what is going on outside the borders of the U.S.A.

If you are not a personal subscriber to P&P and are on a routing list, we urge you, for your own advancement, either to subscribe for your own copy or to purchase a copy of the WRN from the P&P office nearest you.

Who Am I?

I knew your name long before your lips could form a word. I knew your father's name and the name of your mother before she married your dad. I knew the physician who brought you into the world and gave you your first encouraging slap on the back.

When your eyes were able to discern the walls and ceilings of your nursery, you peered through the bars of your crib and saw me, but you did not know me then. During all of your days and nights of infancy and childhood I stayed by your side, always ready to help you with the chore of growing up.

And then one day your mother watched with tear-dimmed eyes as you toddled off to your first day of school. It seemed a little silly that you should take me with you on that day because I meant so very little to you. Through your grade school days and during your high school years you more or less took me for granted. Sometimes you would wonder why I ever came into being, and there were occasions when you pondered over the fate of the world if I should be no more.

Do you remember graduation day and how you stood with your classmates upon the rostrum in the old high school? You were anxious and awkward that afternoon; but your parents beamed with pride, and it was good to learn you coveted me.

But, it was not until you had spent a few years in college that you realized how important I was in your life and in the lives of your family and friends. One of your professors asked you to make a report about me, and during your research you learned I could be found in many, many places. With your fully-opened eyes you saw me on the street, in your home, in the office, in the factories; in practically every place that knew the hand of man. It dawned on you that nearly everything you saw or used was made possible by me. You knew I was not omnipotent or mystical, yet I had seen the atom bomb and the jet plane long before they became objects in the sky.

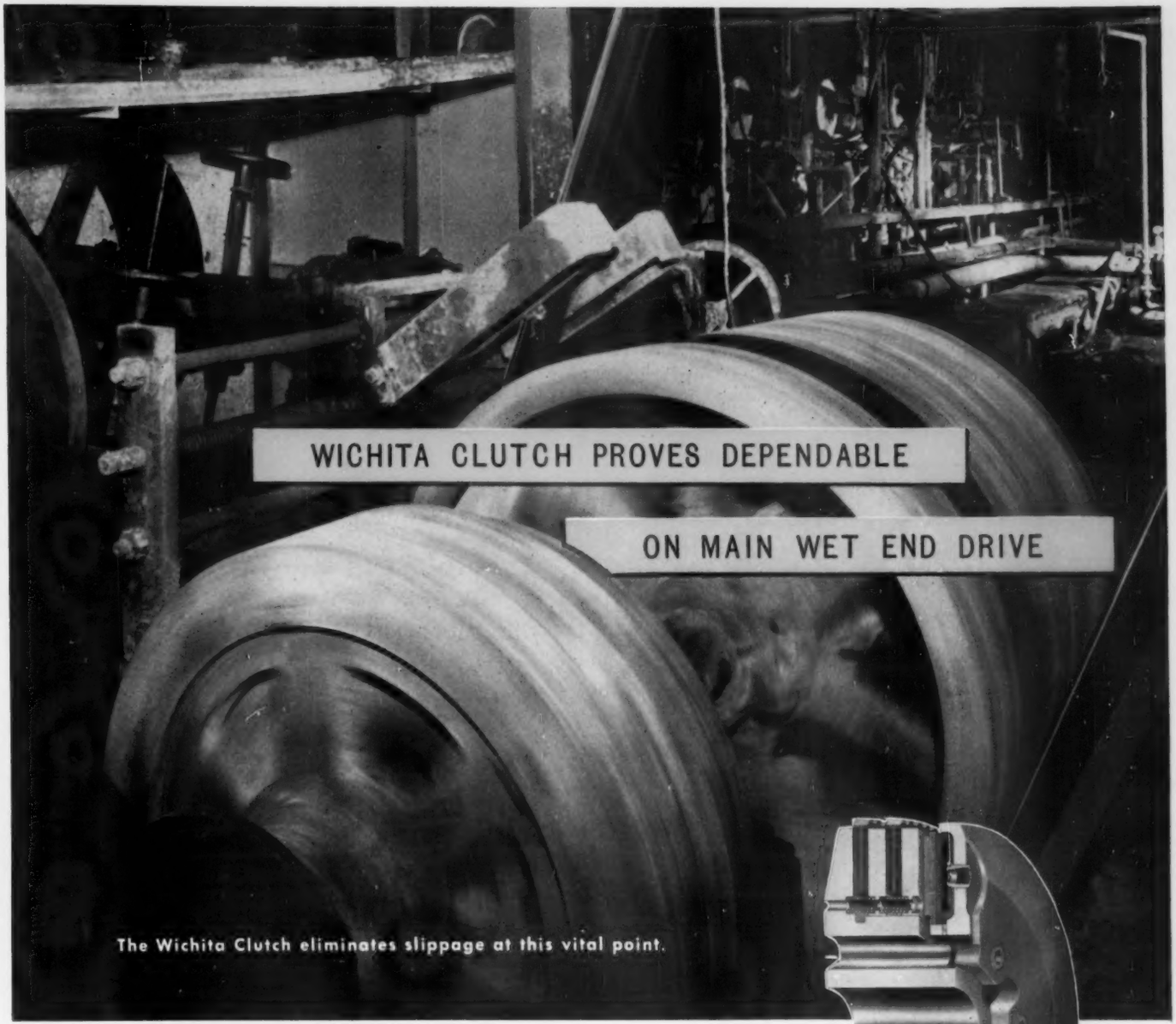
Then you married, and once again I played an important role. I was there when your children were born, and I stayed with them as I had stayed with you; but this time I was more diversified and helpful. I believe your children were brighter than you had been because they appreciated me at an earlier age. Of course, I was more polished and appealing as the world progressed; so, possibly you were not to blame after all.

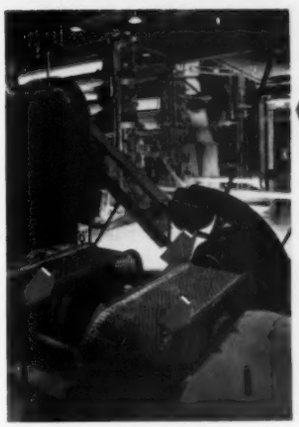
You were approaching middle age before I really became a habit with you. You looked forward to seeing me at breakfast time; and in the evening, when your day's work was done and you were relaxing in your chair, I was your boon companion.

The years rolled on. You catnapped more often than you had before; and although I was neglected, I did not take offense. You spent many hours in reverie and retrospection, and I was often in your thoughts. You knew the day was fast approaching when you, a mortal being, would be no more upon the earth. You knew, when all was said and done, that I would still remain to preserve your name and memory for thousands of years to come.

Who am I? I am paper. Your very good friend.

By FRAN SCHILLER
General Finishing Supt.
West Virginia Pulp & Paper Co.
Luke, Md.





Wichita Clutches also chosen by Fleming & Sons, Inc. to lower maintenance on this calender drive . . . arrows point to cutter drive clutches

Fleming & Sons, Inc., paper manufacturers in Dallas, Texas, have installed several Wichita Clutches and Brakes as a part of an intensive modernization program to reduce maintenance costs. The Wichita equipment is proving dependable according to plant engineer, Walter Alderfer.

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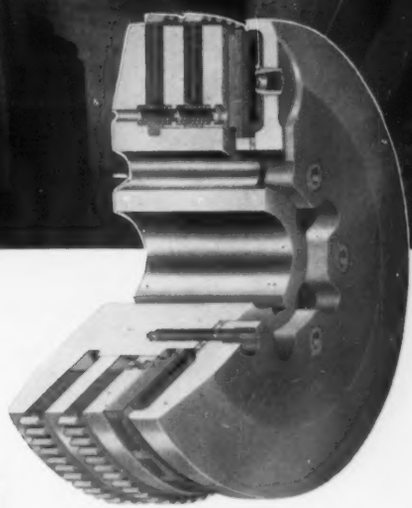

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